

CITY OF WOONSOCKET, RHODE ISLAND

WOONSOCKET WATER DEPARTMENT

COPY NO. _____

2010 WATER SYSTEM IMPROVEMENTS CONTRACT NO. 2

MAYOR

LEO T. FONTAINE

DIRECTOR OF PUBLIC WORKS

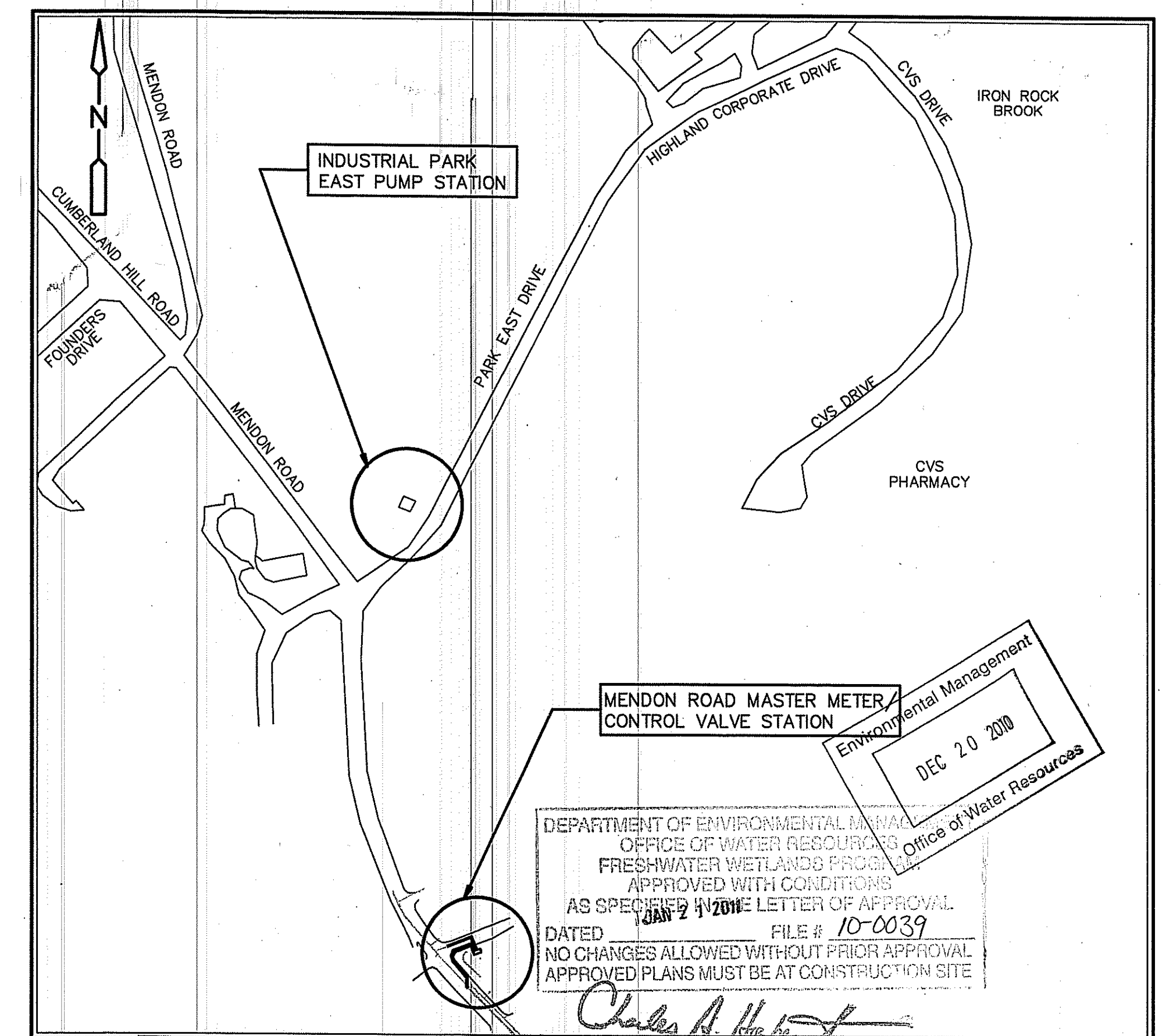
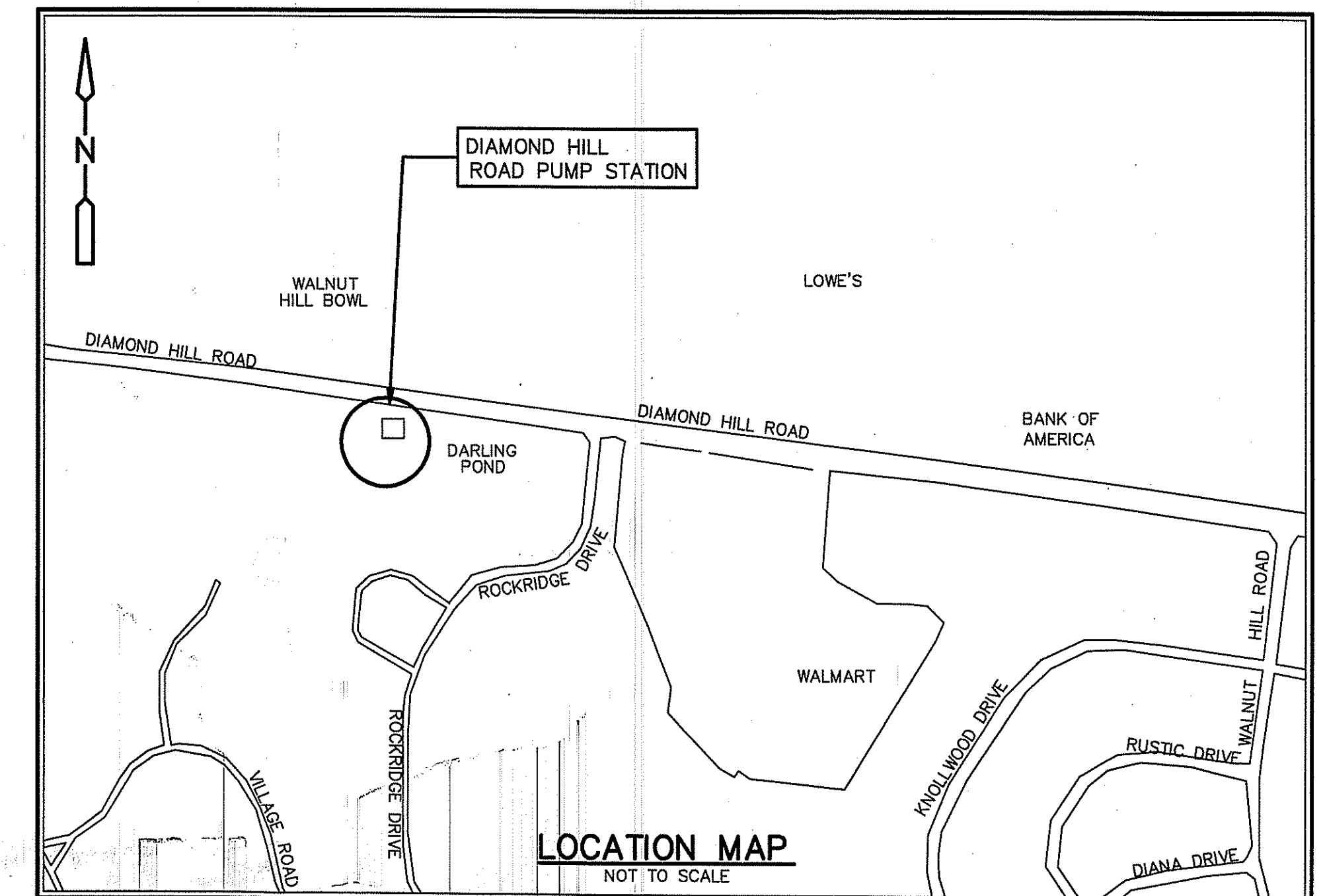
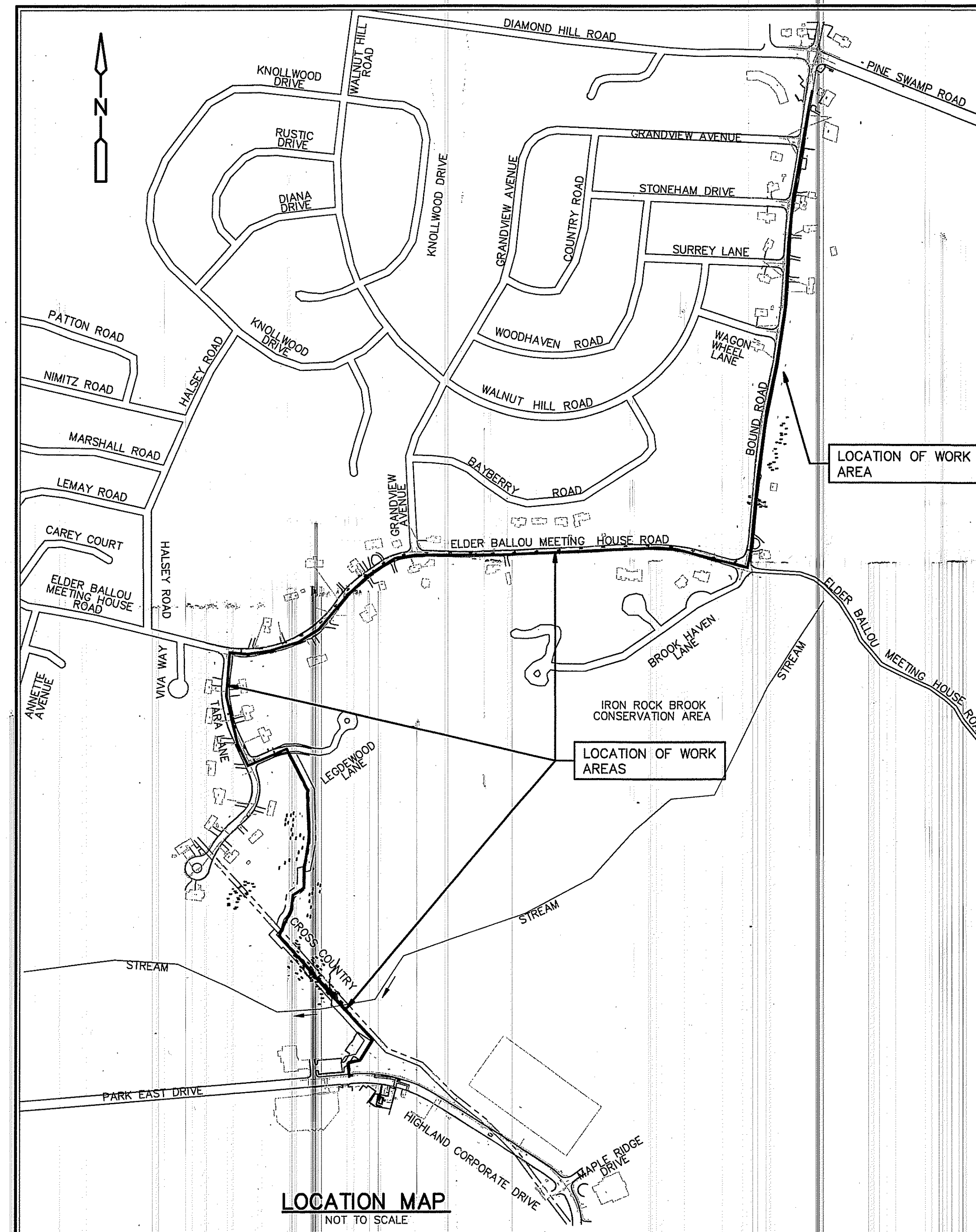
MICHAEL ANNARUMMO

WATER DIVISION SUPERINTENDENT

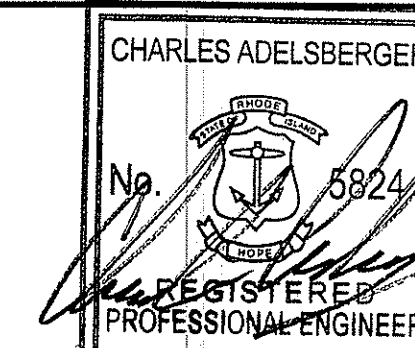
CAROL LARIVIERE

DECEMBER 2010

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CDM Camp Dresser & McKee Inc.
PROVIDENCE, RHODE ISLAND
Consulting Engineering Construction



LOCATION MAP
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JAN 2 1 2011 FILE # 10-0039
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Environmental Management
DEC 20 2010
Office of Water Resources

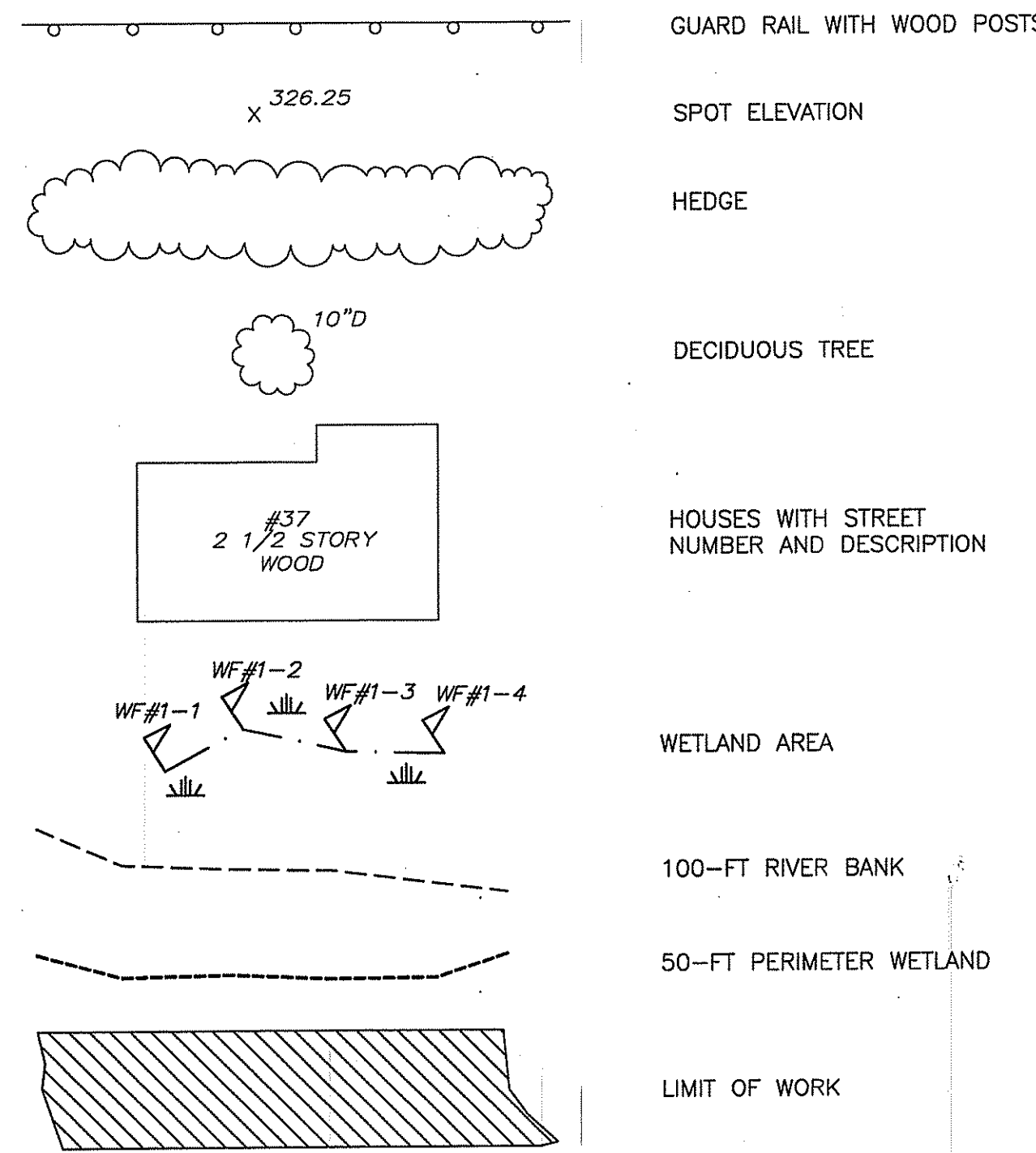
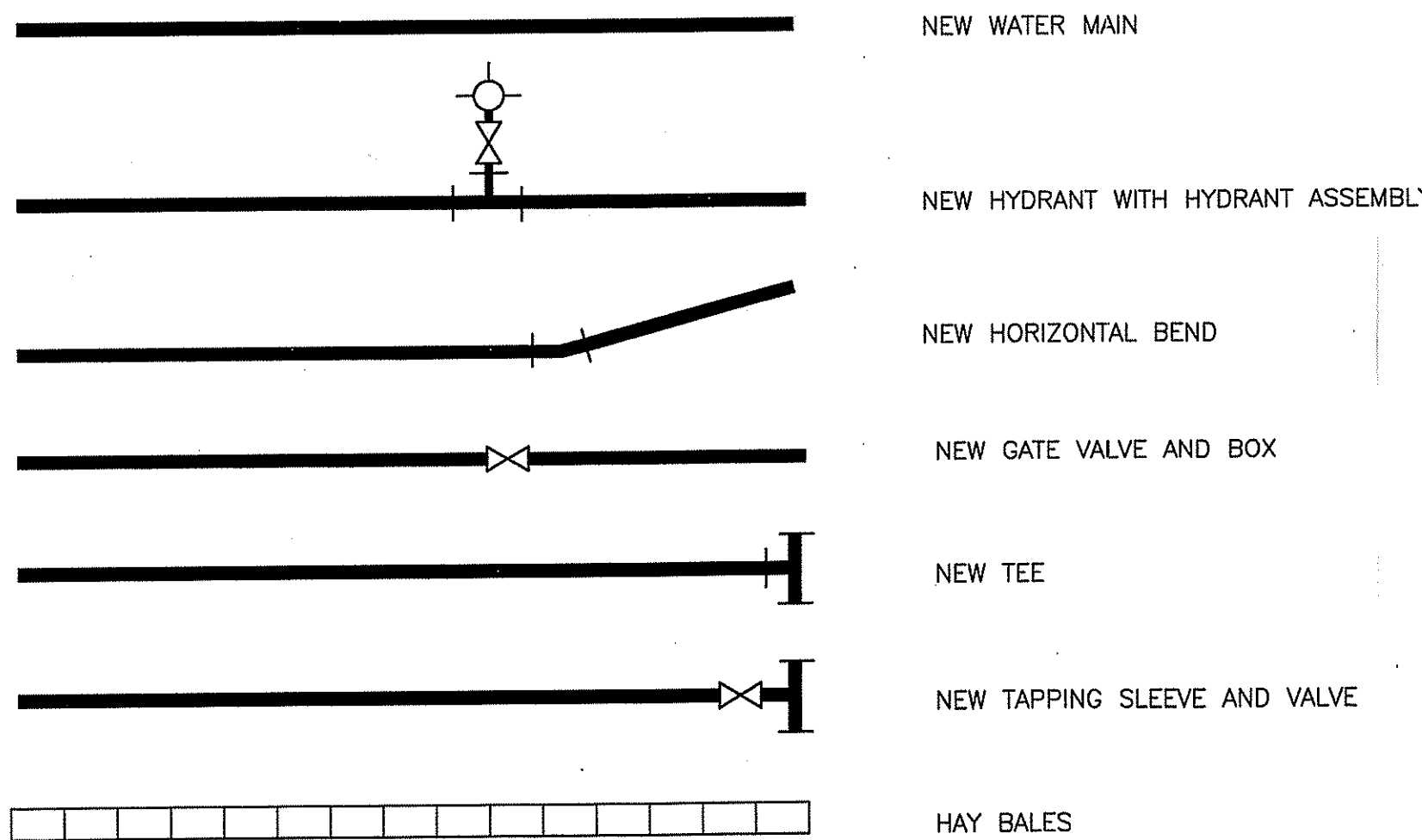
Operations

LEGEND

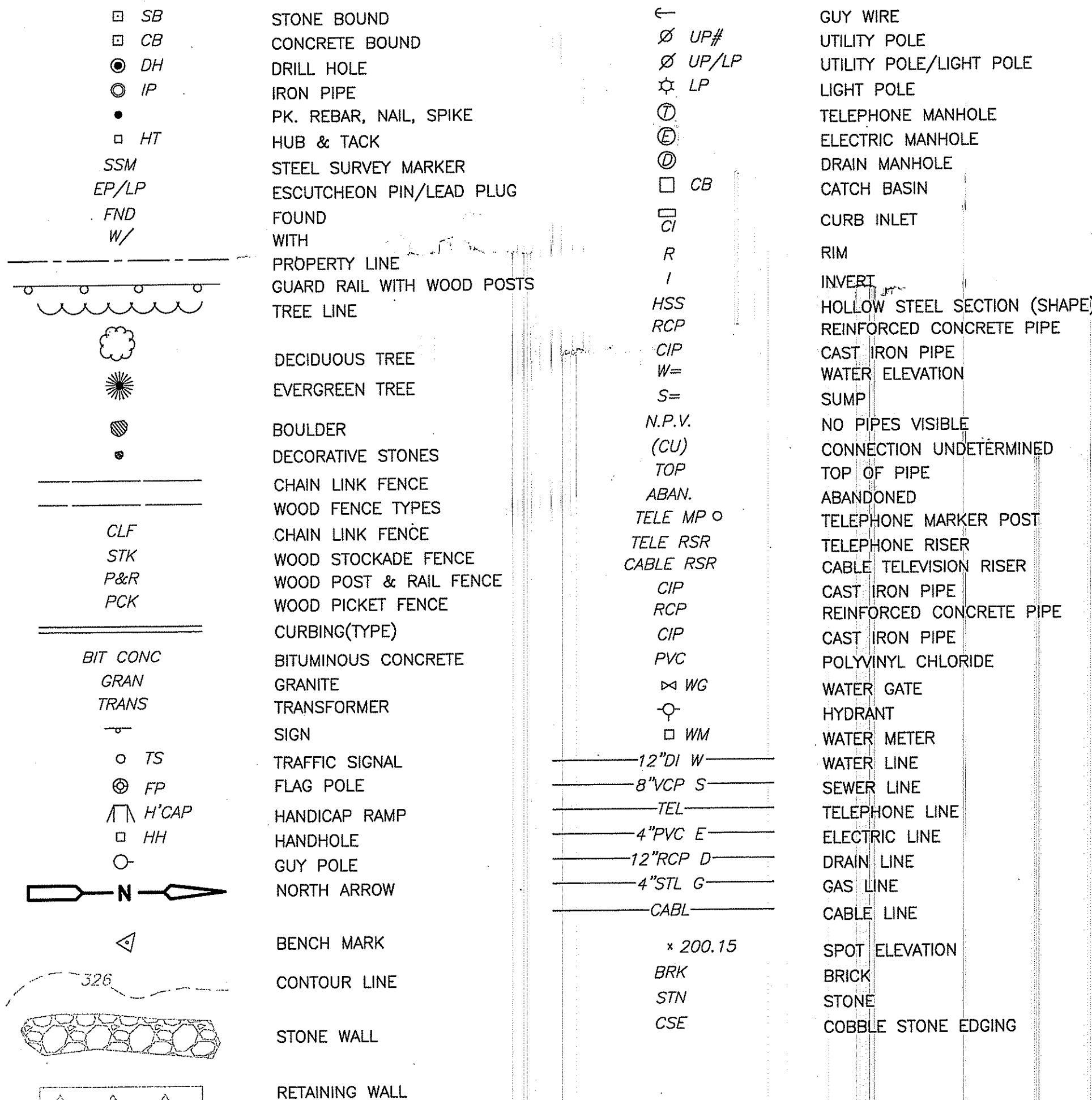
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GENERAL NOTES

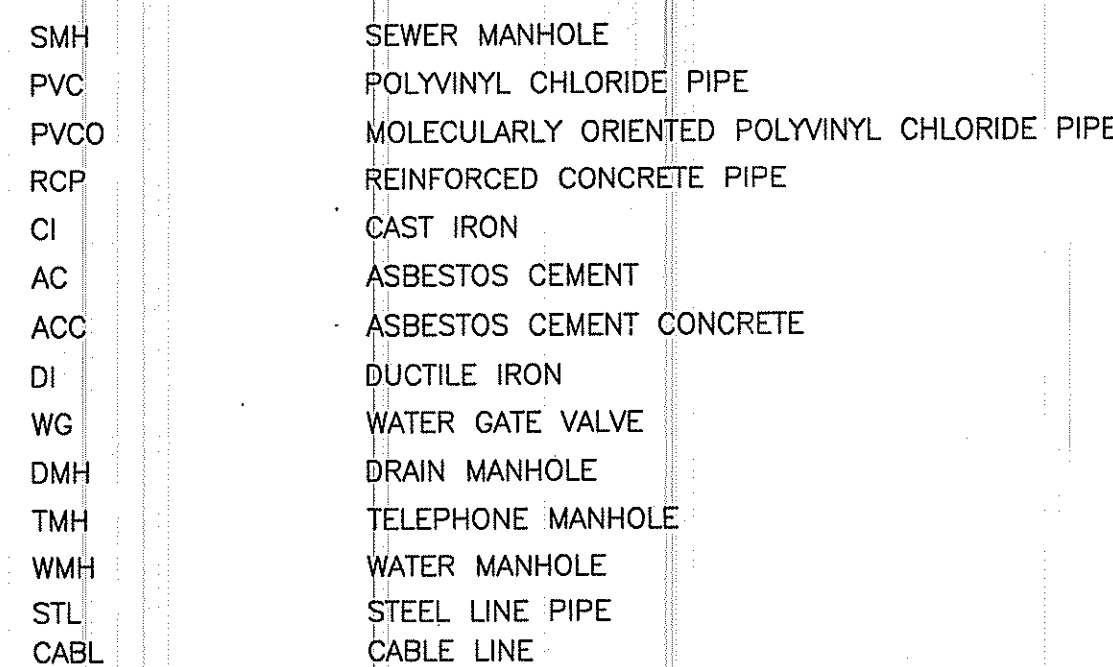
NEW



EXISTING



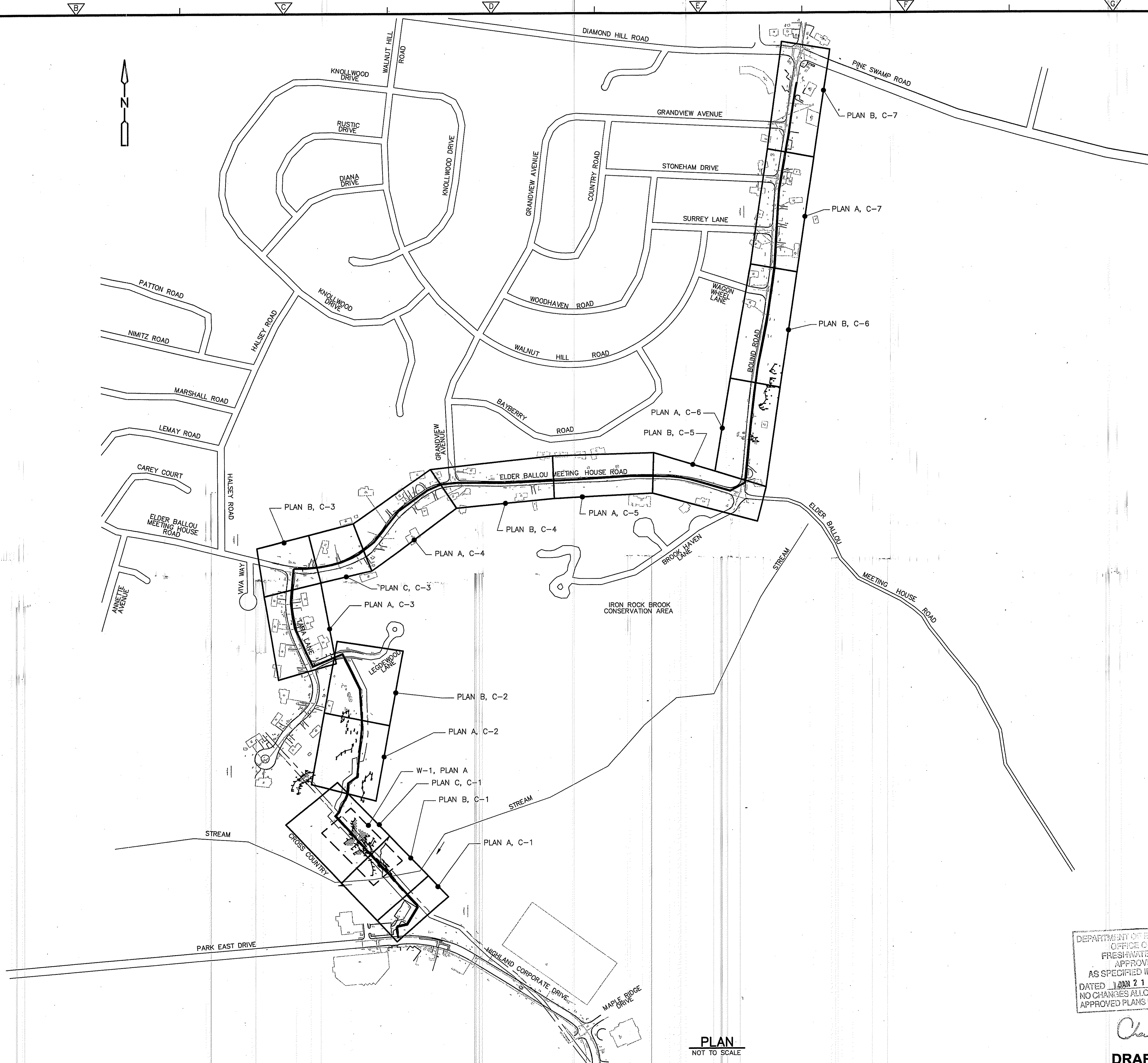
ABBREVIATIONS



1. EXACT LOCATION OF NEW PIPES, VALVES, FITTINGS, ETC. TO BE DETERMINED IN THE FIELD BY THE OWNER'S REPRESENTATIVE. VERTICAL BENDS SHALL BE INSTALLED WHERE REQUIRED.
2. THE LOCATIONS, MATERIALS AND SIZES OF EXISTING PIPES, DUCTS, CONDUITS, AND OTHER UNDERGROUND STRUCTURES SHOWN ON THE DRAWINGS ARE NOT WARRANTED TO BE EXACT NOR IS IT WARRANTED THAT ALL UNDERGROUND STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR OBTAINING ALL LOCATIONS AND SIZES OF EXISTING UNDERGROUND STRUCTURES AND UTILITIES BEFORE BEGINNING CONSTRUCTION.
3. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
4. THE CONTRACTOR SHALL MAINTAIN A MINIMUM CLEARANCE BETWEEN THE WATER MAIN AND ALL OTHER EXISTING UTILITIES OF AT LEAST 12-INCHES.
5. NEW WATER MAINS SHALL PASS UNDER ALL EXISTING UTILITIES UNLESS OTHERWISE NOTED ON THE DRAWINGS OR DIRECTED BY THE ENGINEER.
6. PLANS PREPARED BY CAMP DRESSER AND MCKEE INC., PROVIDENCE, RHODE ISLAND ARE BASED ON FIELD SURVEY PERFORMED BY SURVEYING AND MAPPING CONSULTANTS, SEPTEMBER 2009 AND THE WOONSOCKET WATER DIVISION GIS DATA BASE.
7. EXISTING WATER MAIN INFORMATION PROVIDED BY THE WOONSOCKET WATER DIVISION
8. NOTES PERTAINING TO NEW WORK SHOWN AS: []
9. ALL NEW WATER MAINS SHALL HAVE A MINIMUM OF 5 FEET OF COVER UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR DIRECTED BY THE ENGINEER.
10. CONTRACTOR SHALL OBTAIN ALL PERMITS AND APPROVALS REQUIRED FOR THE CONSTRUCTION OF THE WATER MAINS.
11. THE CONTRACTOR SHALL TAKE APPROPRIATE PRECAUTIONS WHILE WORKING IN OR NEAR WETLANDS. ALL WORK MUST MEET WITH ALL REGULATIONS AND REQUIREMENTS OF THE CITY OF WOONSOCKET, ALL STATE AGENCIES, AND THE U.S. ARMY CORPS OF ENGINEERS.
12. ALL NEW WATER MAIN FITTINGS SHALL BE RESTRAINED WITH RESTRAINED JOINTS AS SPECIFIED. HYDRANT BRANCH CONNECTIONS SHALL BE RESTRAINED WITH RESTRAINED JOINTS AND THRUST BLOCKS. SEE MISCELLANEOUS DETAIL SHEET CSD-2 FOR THRUST BLOCK REQUIREMENTS AND RESTRAINED JOINT LENGTHS.
13. THE CONTRACTOR SHALL EXCAVATE TEST PITS TO LOCATE EXISTING WATER MAINS WHERE NEW WATER MAINS WILL BE CONNECTED, AT ALL INTERSECTIONS, AND OTHER LOCATIONS AS REQUIRED TO FACILITATE INSTALLATION OF NEW WATER MAIN.
14. ELEVATIONS SHOWN ON THESE DRAWINGS ARE NGVD.
15. EXISTING WATER MAIN AND WATER SERVICE INFORMATION PROVIDED BY THE WOONSOCKET WATER DIVISION. IT IS NOT WARRANTED THAT ALL WATER SERVICES AND WATER MAINS ARE SHOWN ON THE DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXACT LOCATION, SIZE, AND TYPE OF ALL EXISTING WATER SERVICE CONNECTIONS BEFORE CONSTRUCTION. EXISTING WATER MAINS ARE ASSUMED C.I. OR D.I. UNLESS OTHERWISE NOTED.
16. CONTRACTOR MUST MINIMIZE DISRUPTIONS IN EASEMENTS AND PRIVATE PROPERTIES, TO THE EXTENT POSSIBLE, AND SHALL NOT WORK, STOCKPILE MATERIALS, OR OTHERWISE DISTURB THE AREA OUTSIDE OF THE EASEMENTS.
17. CONTRACTOR TO ABANDON EXISTING WATERMAINS IN PLACE WHERE POSSIBLE. WHERE A CONFLICT BETWEEN NEW AND EXISTING MAINS OCCUR CONTRACTOR SHALL REMOVE EXISTING MAIN AND DISPOSE OF PROPERLY.
18. WHEN UNDERGROUND PIPING IS TO BE ALTERED OR REMOVED THE REMAINING PIPING SHALL BE PROPERLY CAPPED. ABANDONED UNDERGROUND PIPING WILL BE LEFT IN PLACE UNLESS IT INTERFERES WITH NEW WORK OR IS SHOWN OR SPECIFIED TO BE REMOVED. ABANDONED PIPE SHALL HAVE OPEN ENDS PLUGGED WITH CONCRETE.
19. THE LOCATION OF NEW HYDRANTS IS SHOWN SCHEMATICALLY. THE EXACT LOCATION OF NEW PIPES, VALVES, FITTINGS, HYDRANTS, AIR RELEASE VALVE MANHOLE ASSEMBLIES ETC. SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER AND APPROVED BY OWNER.
20. CONTRACTOR IS RESPONSIBLE FOR DISTRIBUTING WRITTEN NOTIFICATION TO ALL AFFECTED HOMES AND BUSINESSES AT LEAST 48 HOURS PRIOR TO INTERRUPTION OF EXISTING WATER SERVICE.
21. CONTRACTOR SHALL COMPLETE WORK IN ACCORDANCE WITH SEQUENCE OF CONSTRUCTION DETAILED IN SPECIFICATIONS SECTION 01010 UNLESS ALTERNATIVE SEQUENCE PROPOSED BY CONTRACTOR HAS BEEN APPROVED BY ENGINEER. CONTRACTOR MUST PREPARE AN ANTICIPATED SEQUENCE OF CONSTRUCTION AND FORMALLY SUBMIT THE SEQUENCE TO ENGINEER PRIOR TO THE PRE-CONSTRUCTION MEETING.
22. CONTRACTOR SHALL MINIMIZE DISRUPTIONS TO EXISTING FENCES, WALLS, WALKWAYS, LANDSCAPING AND OTHER SURFACE FEATURES DURING CONSTRUCTION. RESTORE DISTURBED FEATURES AS DIRECTED BY ENGINEER.
23. WHERE NEW WATER MAIN PASSES UNDER SEWER, OR WHERE WATER MAIN PASSES OVER SEWER WITH LESS THAN 18" SEPARATION, WATER MAIN SHALL BE SLEEVED WITH CONCRETE PIPE WITH ACCEPTABLE BULK HEAD FOR A MINIMUM OF 10-FT TO EITHER SIDE OF THE RESPECTIVE CENTER LINES.
24. ALL NEW HYDRANTS NOT YET ACTIVATED AND EXISTING HYDRANTS WHOSE WATER SUPPLY HAS BEEN TURNED OFF ARE TO BE SECURELY COVERED WITH A BAG INDICATING THAT THE HYDRANT IS NOT IN SERVICE. THE BAG SHALL BE MAINTAINED UNTIL THE HYDRANT IS ACTIVATED OR REMOVED. CONTRACTOR SHALL COMMUNICATE WITH ENGINEER AND OWNER WHEN DEACTIVATING HYDRANTS TO ENSURE THAT THE FIRE DEPARTMENT IS CONTACTED.
25. PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL COORDINATE ALL UTILITY RELOCATIONS WITH THE CITY OF WOONSOCKET AND THE RESPECTIVE UTILITY AGENCIES IF REQUIRED. LOCATIONS FOR RELOCATED UTILITY ARE TO BE DETERMINED BY THE RESPECTIVE UTILITY AGENCIES.
26. WHERE INOPERABLE VALVES PREVENT WATER SHUT DOWNS FOR NEW WATER MAIN CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE THE SHUT DOWN TO ISOLATE THE MAIN, EXCAVATE A TEST PIT, CUT INTO THE EXISTING WATER MAIN AND INSERT A TEMPORARY CAP OR PLUG.
27. ALL CATCH BASINS LOCATED WITHIN PROJECT LIMITS SHALL REQUIRE SILTATION CONTROL DEVICES, AS SPECIFIED IN SECTION 02270 OF THE SPECIFICATIONS AND AS SHOWN ON MISCELLANEOUS DETAILS SHEET.
28. CONTRACTOR SHALL UTILIZE GEOTEXTILE FILTER BAGS DURING DEWATERING FOR SEDIMENT CONTROL, AS SPECIFIED IN SECTION 02270 OF THE SPECIFICATIONS.
29. CONTRACTOR SHALL DIG TEST PITS WHERE REQUIRED TO FIND EXISTING WATER MAINS AND WHERE REQUIRED BY ENGINEER.
30. CONTRACTOR SHALL RESTRAIN ALL EXISTING WATER MAINS WHERE REQUIRED BY ENGINEER.
31. THE CONTRACTOR SHALL INSTALL INITIAL TRENCH WIDTH AND FULL WIDTH OVERLAY WHERE WATER MAINS ARE INSTALLED AS SPECIFIED IN SECTION 02576.

DRAFT-FOR PERMITTING PURPOSES ONLY

DESIGNED BY: C. KERSHAW	CITY OF WOONSOCKET, RHODE ISLAND	PROJECT NO. 0669-72635/C2
DRAWN BY: J. CABRERA	WOONSOCKET WATER DEPARTMENT	FILE NAME: LEGEND.DWG
SHEET CHK'D BY: J. LYNCH	2010 WATER SYSTEM IMPROVEMENTS	SHEET NO. 2 OF 9
CROSS CHK'D BY: J. KEANEY	CONTRACT 2	Accession No: 0669-P-2981
APPROVED BY: C. ADELSBERGER		
DATE: DECEMBER 2010		



PLAN
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WATER RESOURCES
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JAN 21 2011 FILE # 10-0039
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles A. Adelberger

Environmental Management
DEC 20 2010
Office of Water Resources

CHARLES ADELSBERGER
No. 5824
REGISTERED PROFESSIONAL ENGINEER

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REV. NO.	DATE	DRWN	CHKD	REMARKS

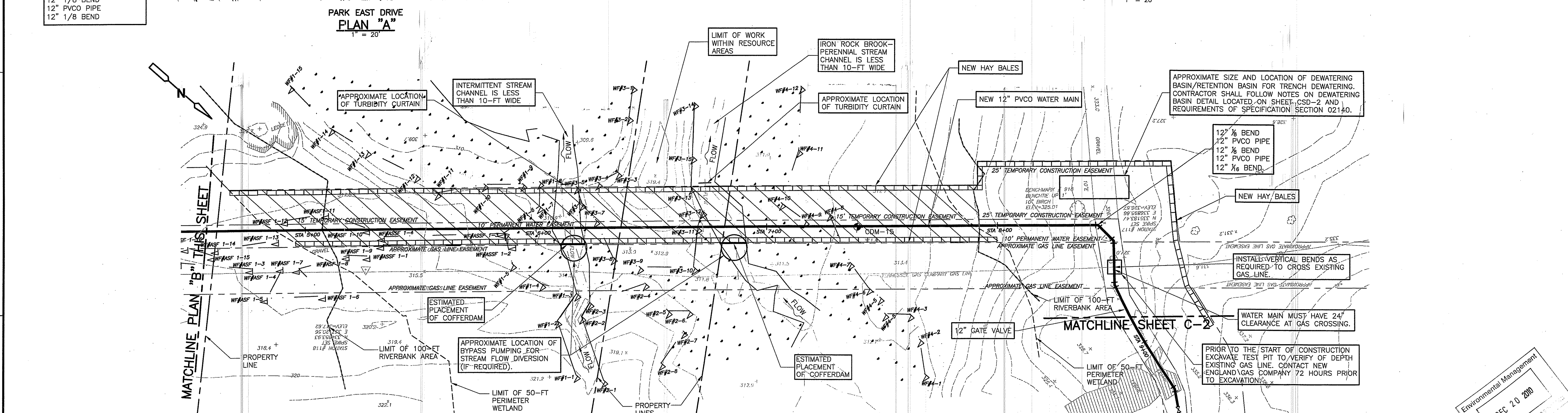
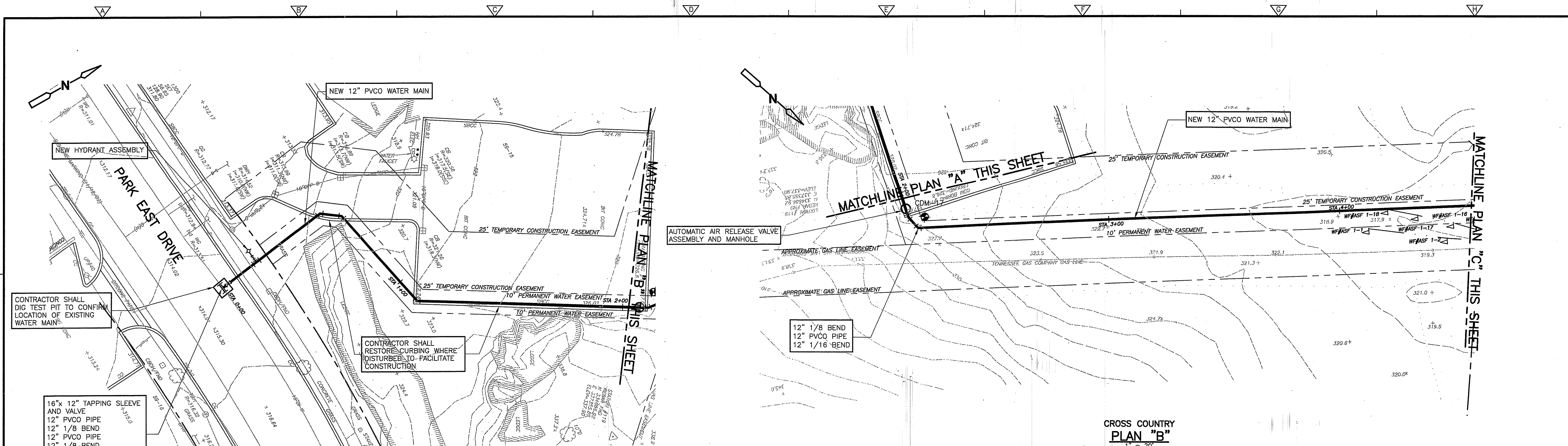
DESIGNED BY: C. KERSHAW
DRAWN BY: J. CABRERA
SHEET CHK'D BY: J. LYNCH
CROSS CHK'D BY: J. KEANEY
APPROVED BY: C. ADELSBERGER
DATE: DECEMBER 2010

CDM
Camp Dresser & McKee Inc.
55 Exchange Terrace
Providence, R.I. 02903
Tel: (401) 751-5300
consulting • engineering • construction • operations

CITY OF WOONSOCKET, RHODE ISLAND
WOONSOCKET WATER DEPARTMENT
2010 WATER SYSTEM IMPROVEMENTS
CONTRACT 2

GENERAL PLAN

PROJECT NO. 0669-72635/C2
FILE NAME: CSTPL009.DWG
SHEET NO.
3 OF 9
Accession No: 0669-P-2979



- NOTES:**
1. CONTRACTOR SHALL STAY WITHIN TEMPORARY AND PERMANENT EASEMENTS AND LIMIT DISTURBANCE WITHIN FRESHWATER WETLANDS.
 2. CONTRACTOR SHALL NOT STORE EQUIPMENT, DISTURB, OR ENTER EXISTING GAS COMPANY EASEMENT.
 3. CONTRACTOR SHALL RESTORE ALL PROPERTY DISTURBED DURING CONSTRUCTION TO AT LEAST EQUAL TO ITS PRE-CONSTRUCTION OR BETTER CONDITIONS.
 4. CONTRACTOR IS REQUIRED TO CONTACT NEW ENGLAND GAS COMPANY 72 HOURS PRIOR TO EXCAVATION WHEN CROSSING THEIR GAS MAIN, CONTACT DAVE CARROLL AT 508-435-6812 EXTENSION 8922. A GAS COMPANY REPRESENTATIVE MUST BE PRESENT WHEN EXCAVATING TEST PITS AND INSTALLING WATER MAIN IN PROXIMITY TO THEIR GAS MAIN.
 5. CONTRACTOR SHALL TAPE WRAP ALL DUCTILE IRON FITTINGS, VALVES, HYDRANTS, AND APPURTENANCES ALONG THE CROSS COUNTRY ROUTE FROM PARK EAST DRIVE TO LEDGEWOOD LANE AS SPECIFIED IN SECTIONS 02616 AND 02640.
 6. ALL DEWATERING, DRAINAGE, AND BYPASS PUMPING OPERATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION AND SHALL MEET ALL REQUIREMENTS OF ALL REGULATORY AGENCIES.
 7. BYPASS PUMPING SYSTEMS FOR STREAM DIVERSION SHALL BE DESIGNED TO MEET THE FLOW REQUIREMENTS OF THE STREAM AT THE TIME OF CONSTRUCTION AND MUST BE APPROVED BY THE ENGINEER. CONTRACTOR SHALL LOCATE ALL BYPASS PUMPING COMPONENTS WITHIN THE LIMITS OF THE CONSTRUCTION EASEMENTS.
 8. CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE ENGINEER THE METHOD AND APPROACH FOR DISSIPATING FLOW AND ENERGY DOWNSTREAM OF THE CONSTRUCTION CAUSED BY THE INSTALLATION OF BYPASS PUMPING UPSTREAM.
 9. AS REQUIRED BY RIDEM FRESHWATER WETLANDS PROGRAM, CONTRACTOR SHALL LIMIT ALL CONSTRUCTION ACTIVITIES TO THE DESIGNATED PERMANENT AND TEMPORARY EASEMENTS. CONTRACTOR SHALL NOT DISTURB EXISTING WETLANDS OUTSIDE OF DESIGNATED WORK AREAS.
 10. CONTRACTOR MUST RECEIVE APPROVAL ON THE LOCATION AND TYPE OF PROPOSED COFFERDAM AND TURBIDITY CURTAINS FROM ENGINEER PRIOR TO INSTALLATION.
 11. CONTRACTOR SHALL RECEIVE APPROVAL FROM ENGINEER ON THE LOCATION OF DEWATERING/RETENTION BASIN AND METHOD FOR DEWATERING OF WATER MAIN TRENCH PRIOR TO CONSTRUCTION IN WETLANDS.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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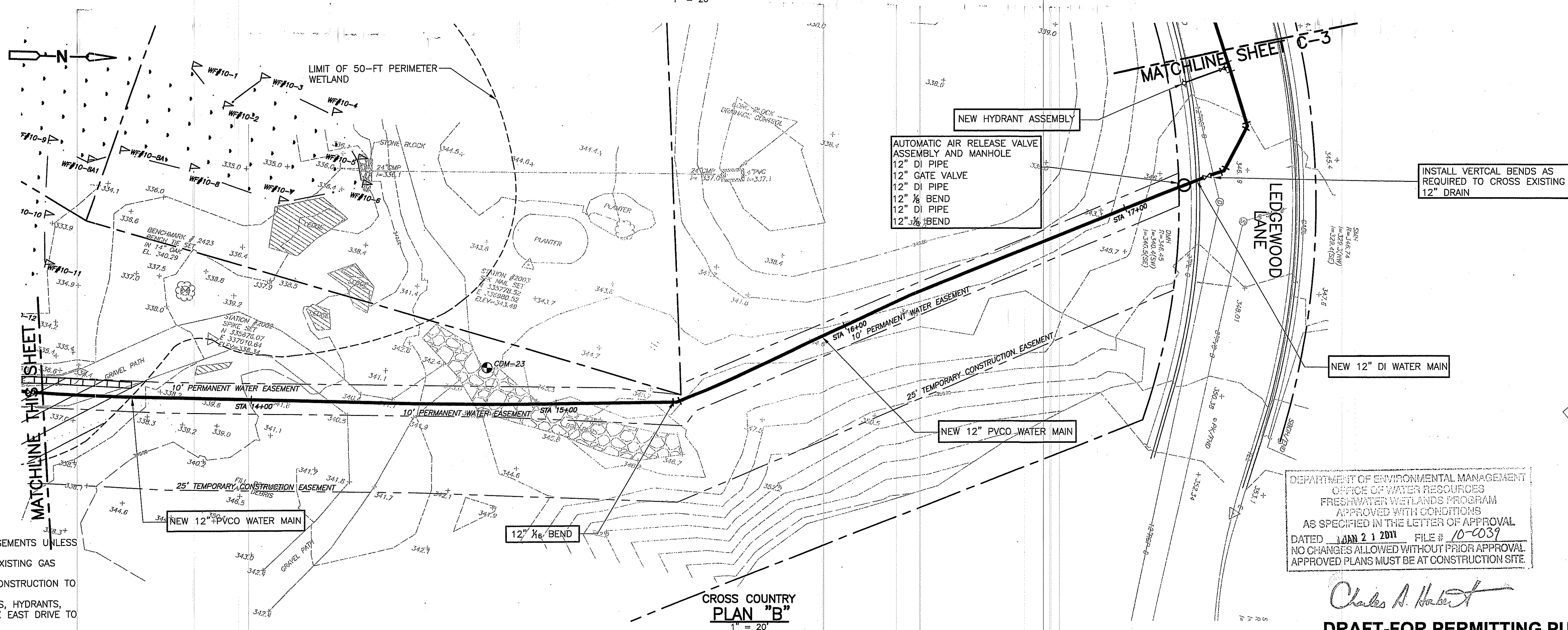
Charles A. Haber

Environmental Management
DEC 20 2010
Office of Water

CHARLES ADELSBERGER
No. 5824
REGISTERED PROFESSIONAL ENGINEER

					DESIGNED BY: C. KERSHAW					CDM Camp Dresser & McKee Inc. 56 Exchange Terrace Providence, R.I. 02903 Tel: (401) 751-5360 consulting • engineering • construction • operations					CITY OF WOONSOCKET, RHODE ISLAND WOONSOCKET WATER DEPARTMENT 2010 WATER SYSTEM IMPROVEMENTS CONTRACT 2										PARK EAST DRIVE AND CROSS COUNTRY										PROJECT NO. 0669-72635/C2 FILE NAME: CSTPL001.DWG SHEET NO. 4 OF 9 Accession No: 0669-P-2982																			
					DRAWN BY: J. CABRERA																																																	
					SHEET CHK'D BY: J. LYNCH																																																	
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REV.	DATE	DRWN	CHKD	REMARKS																																																		

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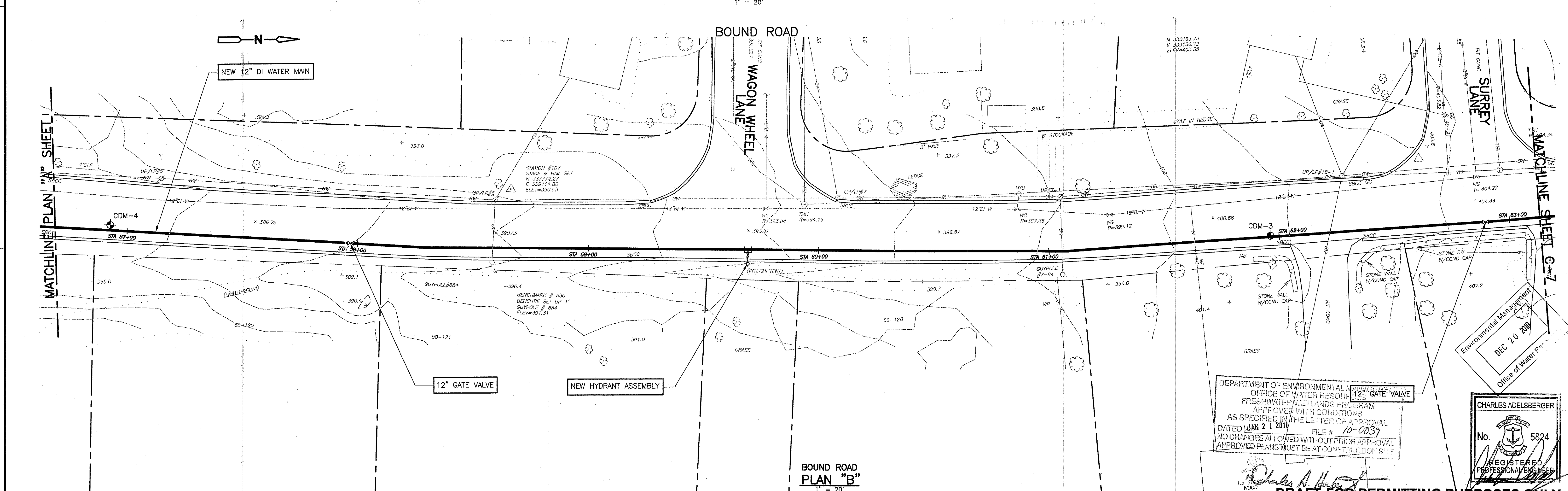
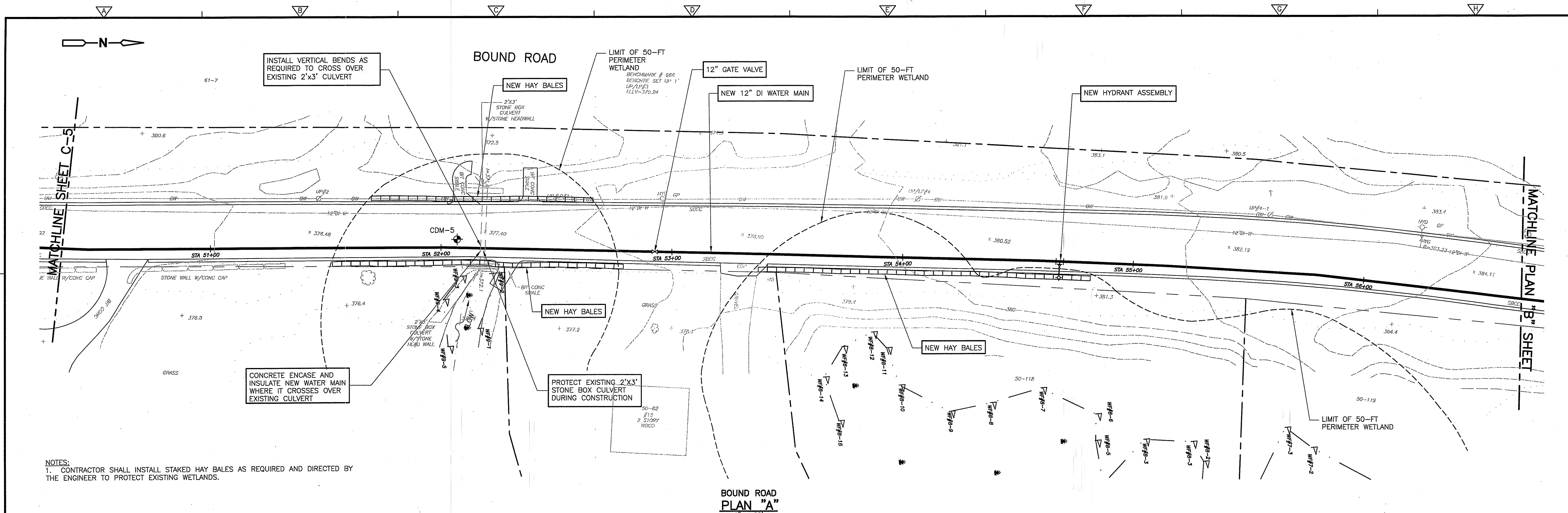


CHARLES ADELSBERGER

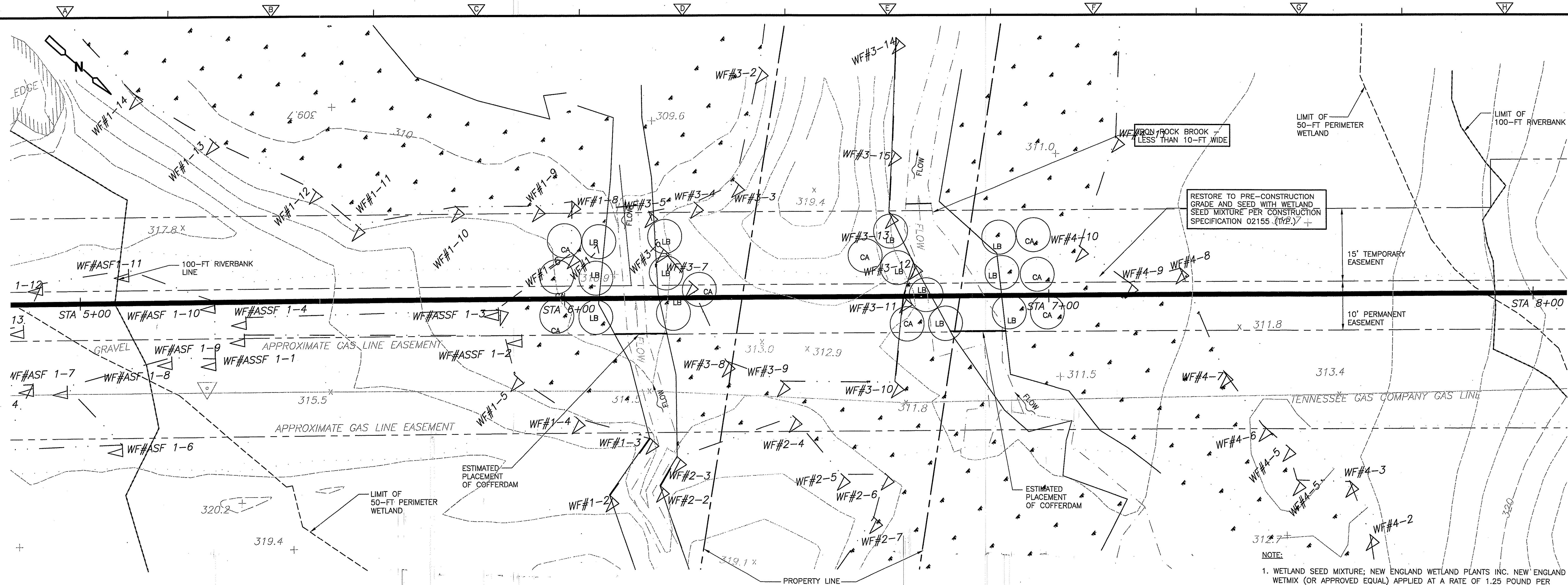
No. 5824

REGISTERED PROFESSIONAL ENGINEER

PROJECT NO. 0669-72635/C2
FILE NAME: CSTPL002.DWG
SHEET NO.
5 OF 9
Accession No: 0669-P-2983



DESIGNED BY: C. KERSHAW DRAWN BY: J. CABRERA SHEET CHK'D BY: J. LYNCH CROSS CHK'D BY: J. KEANEY APPROVED BY: C. ADELSBERGER DATE: DECEMBER 2010				CDM Camp Dresser & McKee Inc. 56 Exchange Terrace Providence, R.I. 02903 Tel: (401) 751-5350 consulting • engineering • construction • operations		CITY OF WOONSOCKET, RHODE ISLAND WOONSOCKET WATER DEPARTMENT 2010 WATER SYSTEM IMPROVEMENTS CONTRACT 2		BOUND ROAD I PROJECT NO. 0669-72635/C2 FILE NAME: CSTPL006.DWG SHEET NO. 6 OF 9 Accession No: 0669-P-2987	
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RESTORE TO PRE-CONSTRUCTION
GRADE AND SEED WITH WETLAND
SEED MIXTURE PER CONSTRUCTION
SPECIFICATION 02155 (WE) +

NOTE:

1. WETLAND SEED MIXTURE; NEW ENGLAND WETLAND PLANTS INC. NEW ENGLAND WETMIX (OR APPROVED EQUAL) APPLIED AT A RATE OF 1.25 POUND PER 2,500 SQUARE FEET UNLESS OTHERWISE INDICATED BY SUPPLIER FOR THIS USE.
2. THE AREA WITHIN THE TEMPORARY EASEMENT WILL BE ALLOWED TO REVEGETATE NATURALLY WITHOUT ANY FUTURE DISTURBANCE.

Estimated Impacts to Resource Areas				
Resource Area	Temporary Alteration (sq. ft.)	Permanent Alteration (sq. ft.)	Temporary Alteration (linear ft.)	Permanent Alteration (linear ft.)
Swamp Wetland	503	760	--	--
River	398	254	50	--
Riverbank	3,836	2,582	--	--
Perimeter Wetland	5,675	4,466	--	--

PLANTING SCHEDULE				
KEY	QUAN	BOTANICAL NAME	COMMON NAME	SIZE
LB	16	LINDERA BENZOIN	COMMON SPICEBUSH	3 GAL. CONT.
CA	9	CLETHERA ALNIFOLIA	SWEET PEPPERBUSH	3 GAL. CONT.

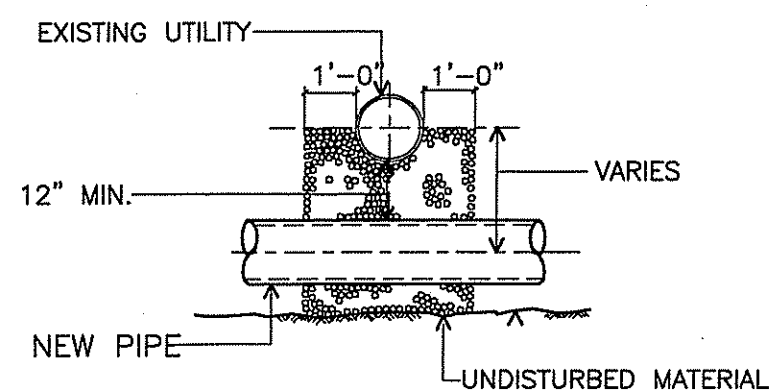
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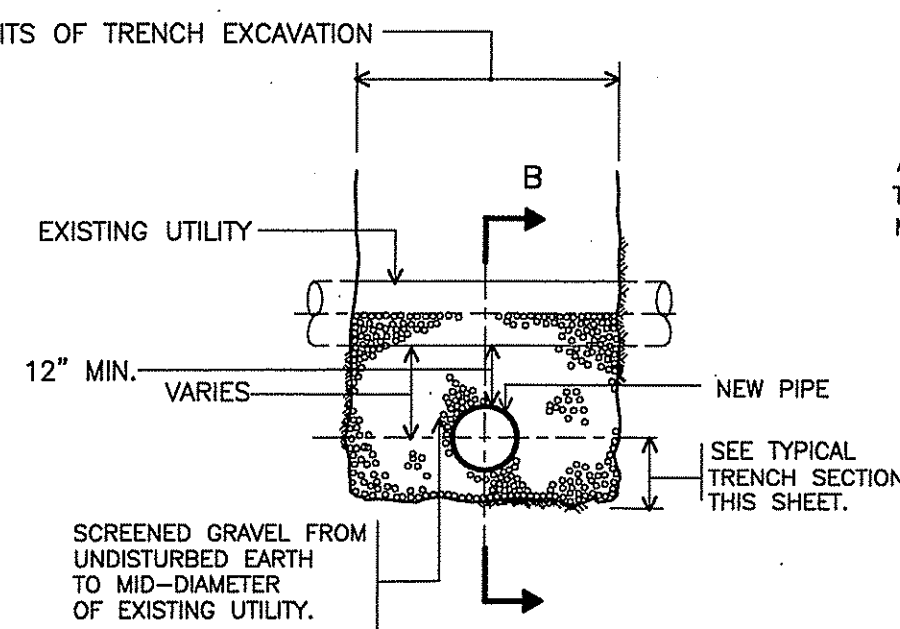
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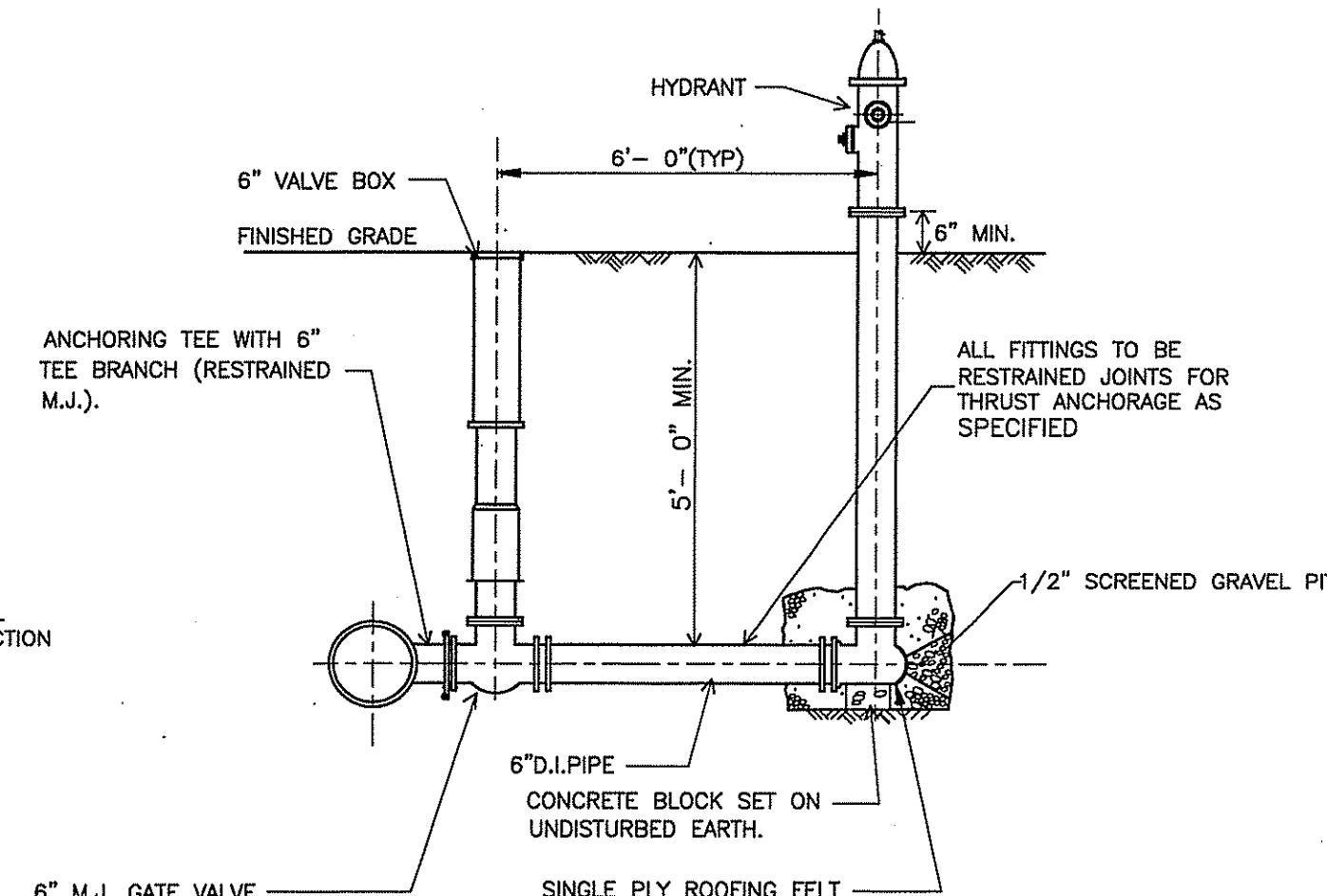


SECTION "B"- "B"

UTILITIES CROSSING DETAIL
NTS

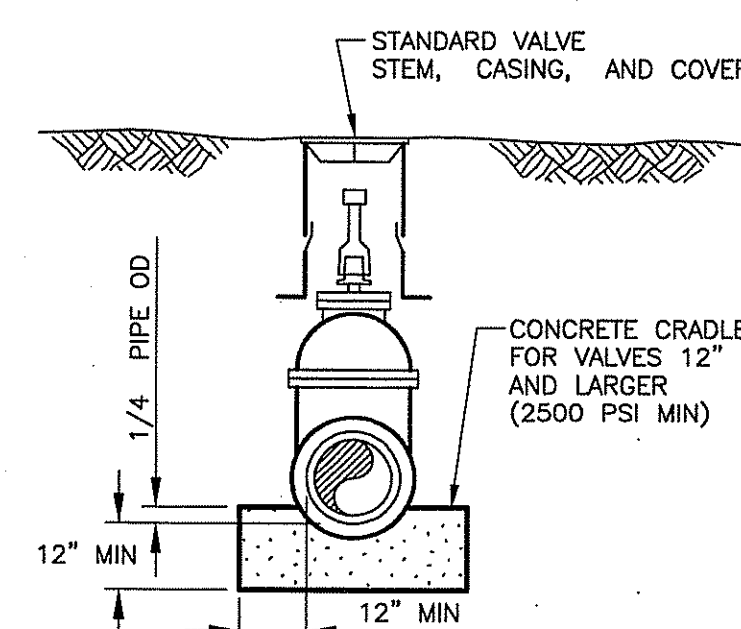


TYPICAL SECTION

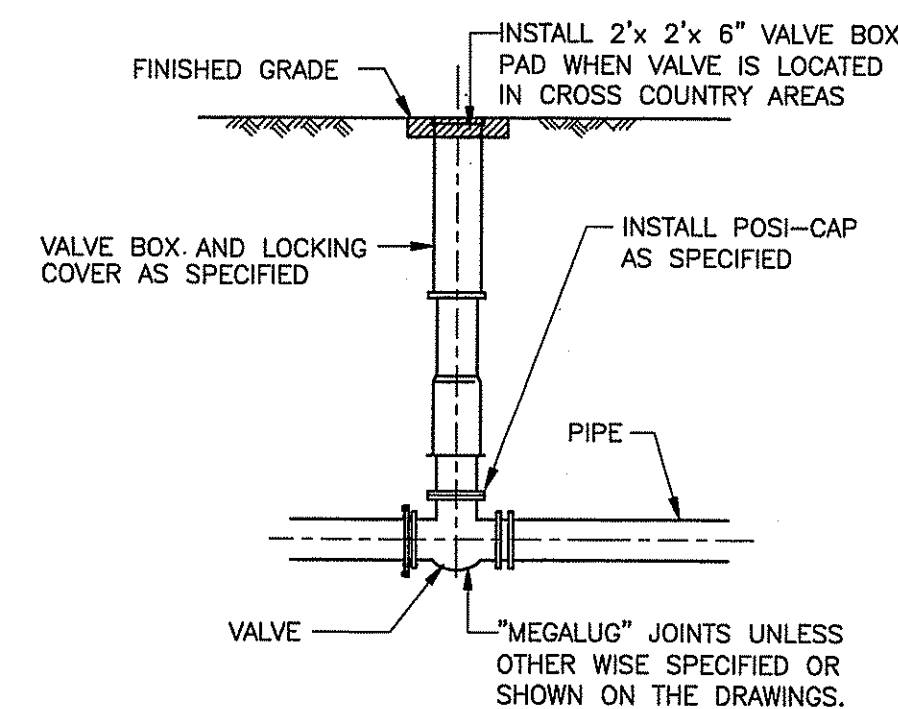


STANDARD CONNECTION

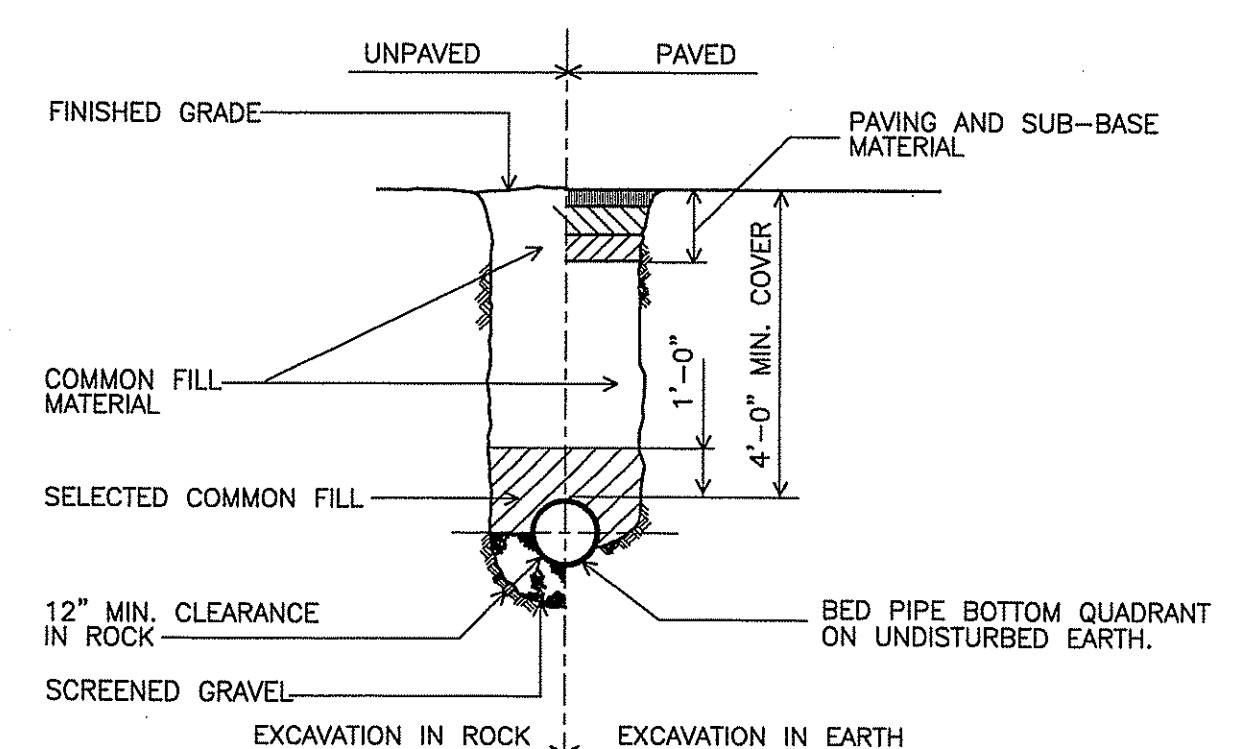
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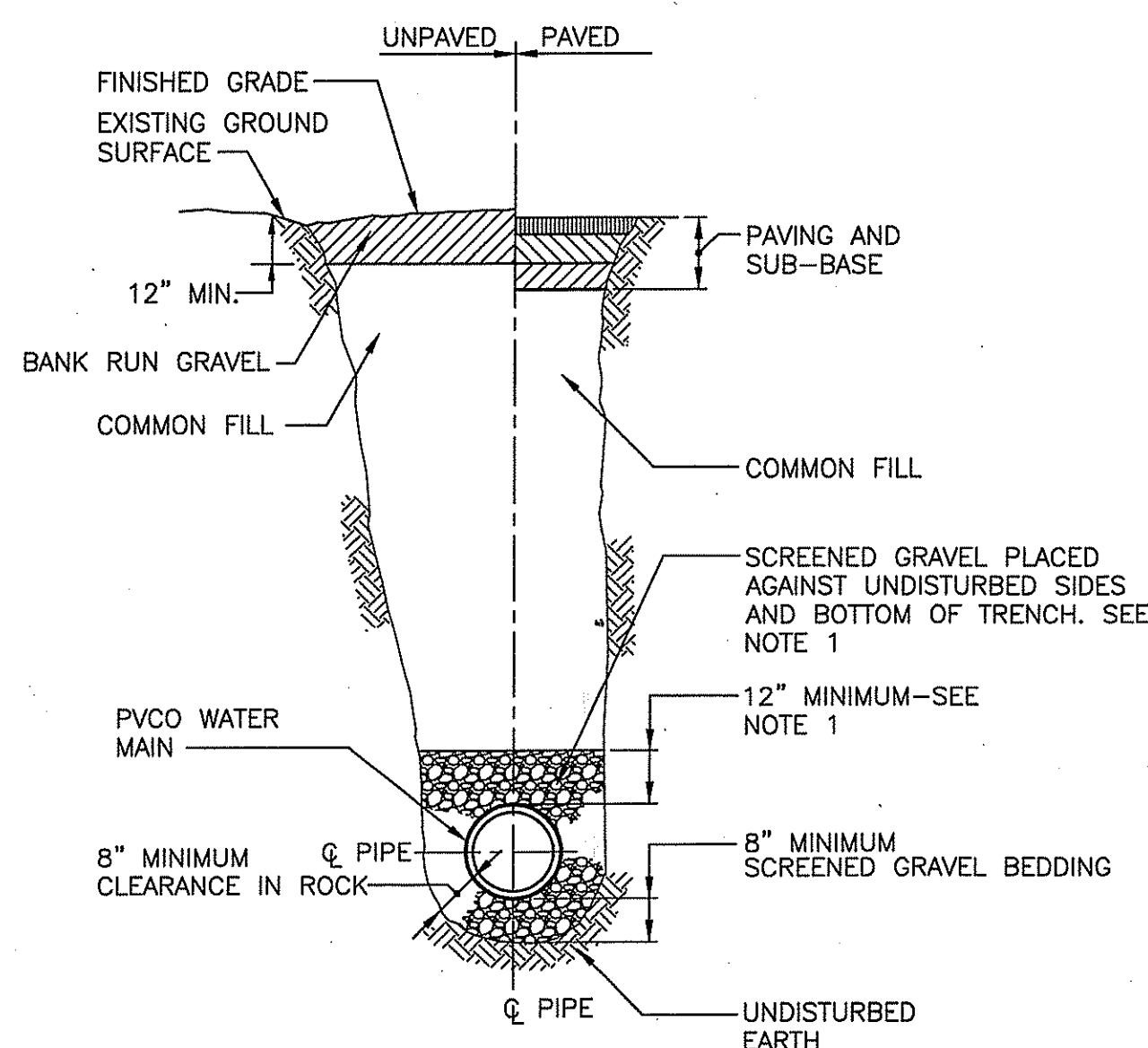
VERTICAL GATE VALVE INSTALLATION DETAIL
NTS



TYPICAL GATE VALVE AND BOX DETAIL
NTS



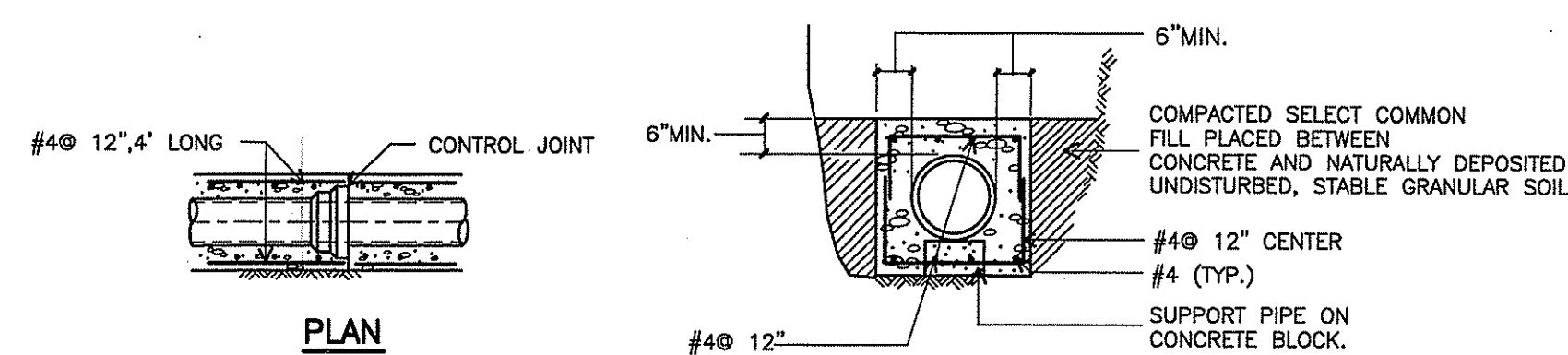
TYPICAL TRENCH DETAIL
FOR D.I. PIPE
NTS



NOTES:

1. FOR PIPES OTHER THAN PVC, SELECT COMMON FILL MAY BE USED FROM MID-DIAMETER OF PIPE TO 12" ABOVE TOP OF PIPE.

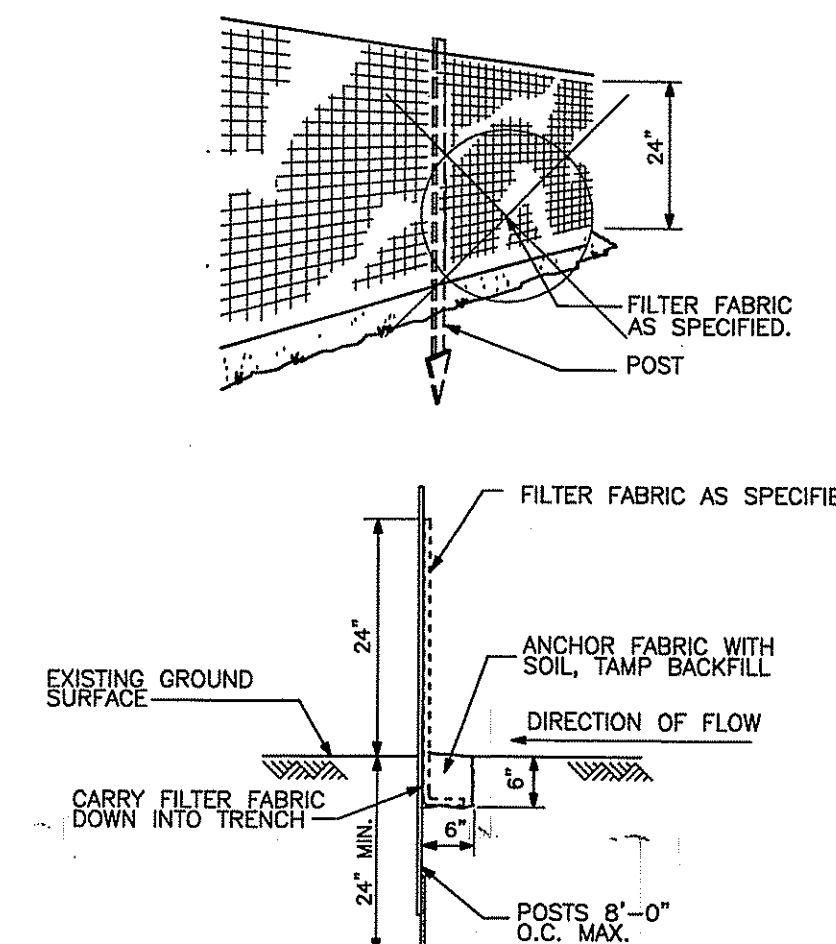
TYPICAL TRENCH DETAIL FOR PVC PIPE
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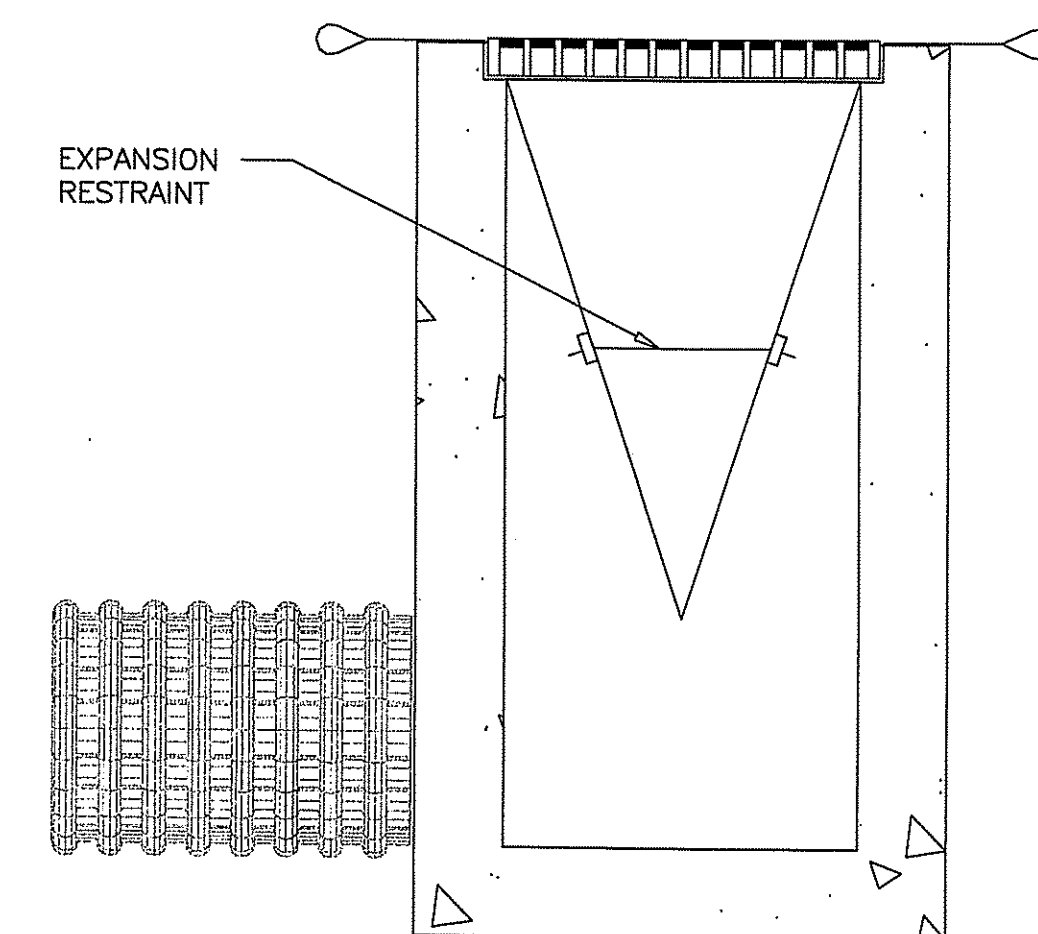
NOTES:

1. CONTROL JOINTS AND PIPE JOINTS FOR ENCASEMENT SHALL COINCIDE FOR SPACING. MAX. DISTANCE BETWEEN CONTROL JOINTS SHALL BE 24'.
2. REINFORCING STEEL TO BE USED ONLY WHEN DEPTH OF COVER TO TOP OF SURFACE OF CONCRETE IS 4'-0" OR LESS.

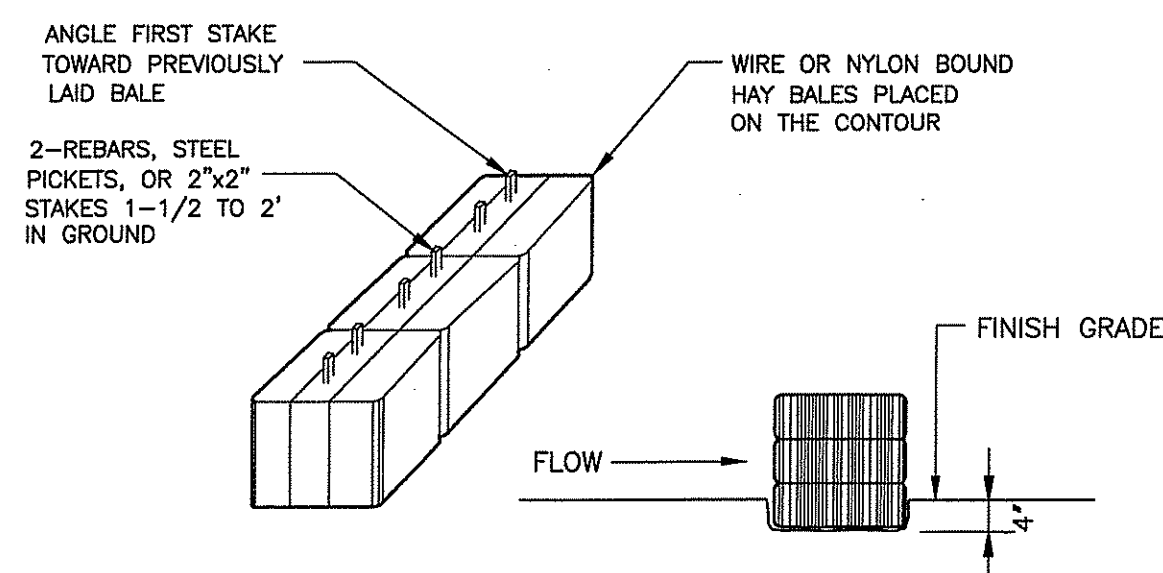
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NOT TO SCALE



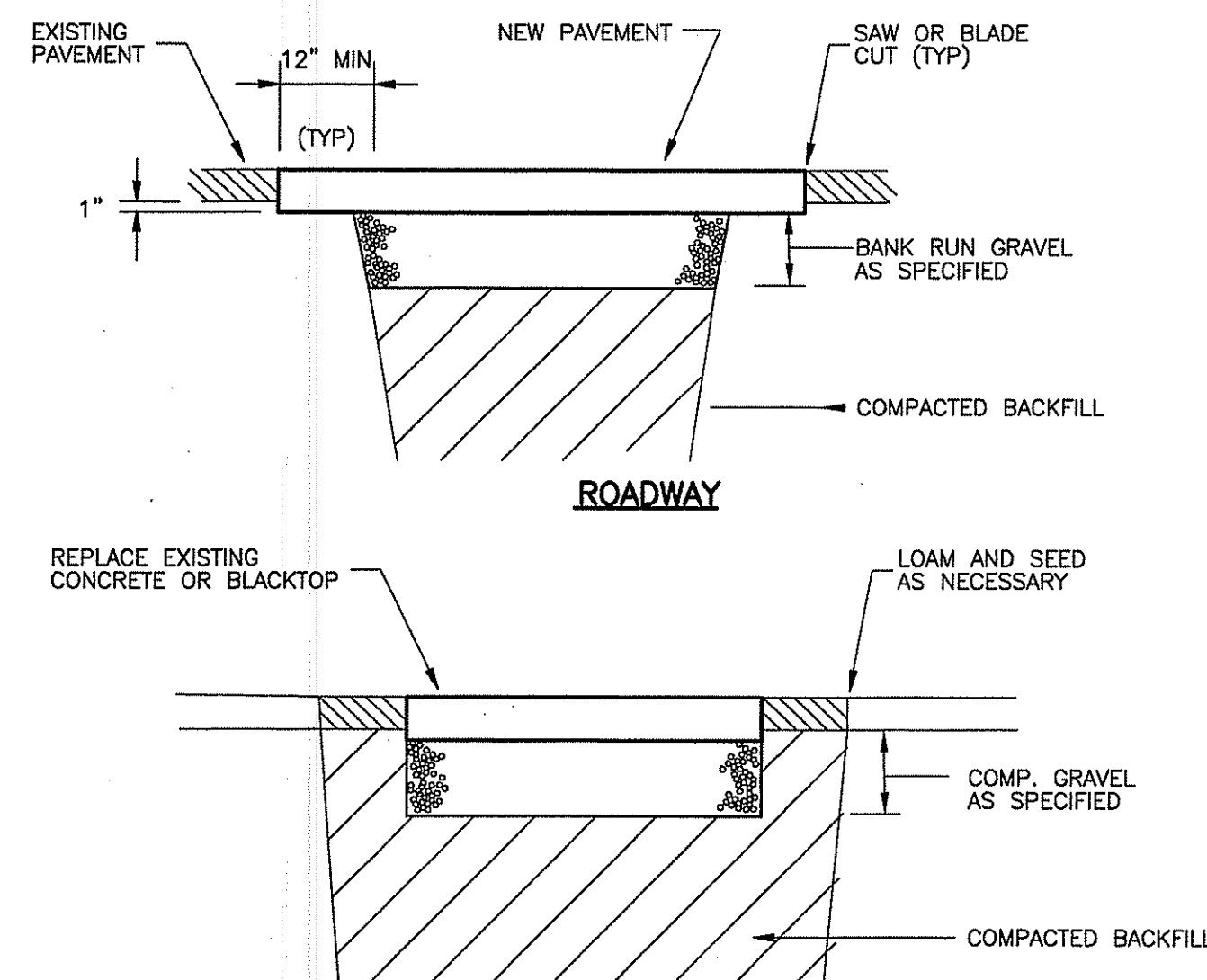
SILT/SEDIMENT FENCE
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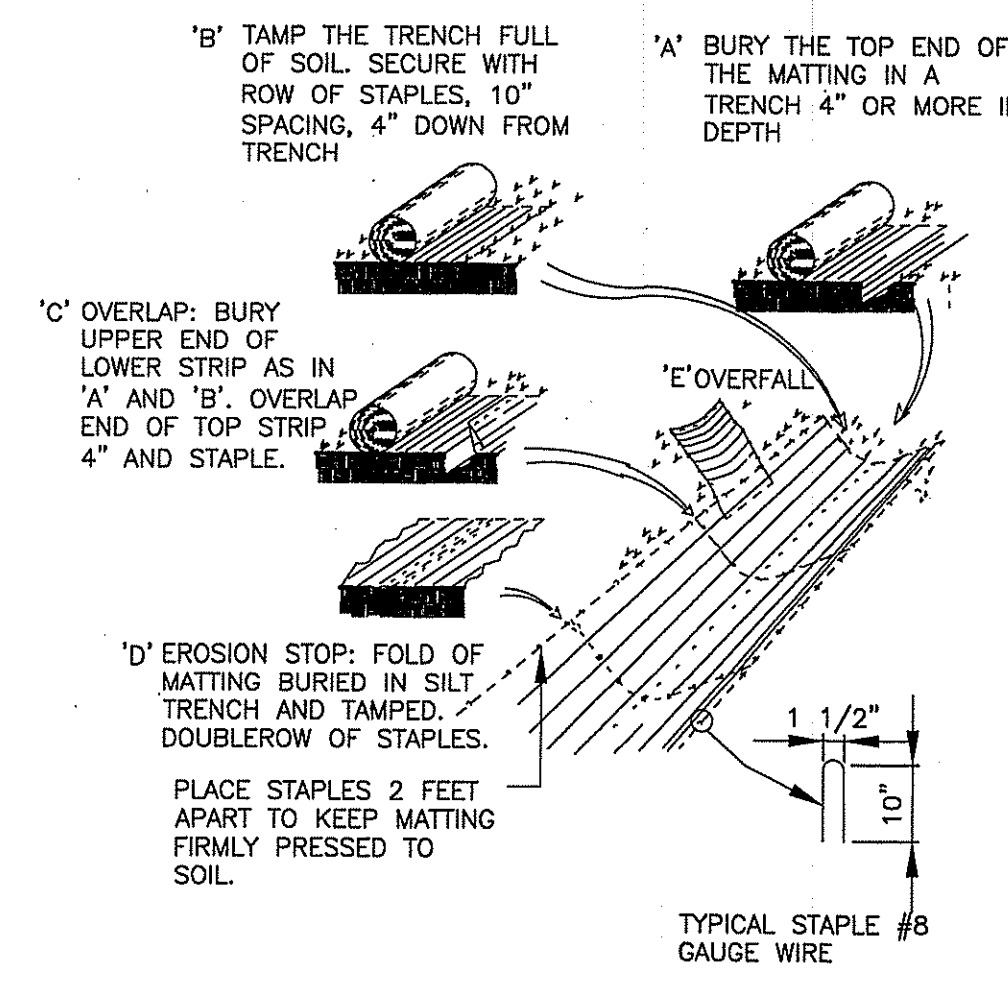
TYPICAL SILTATION CONTROL DEVICE
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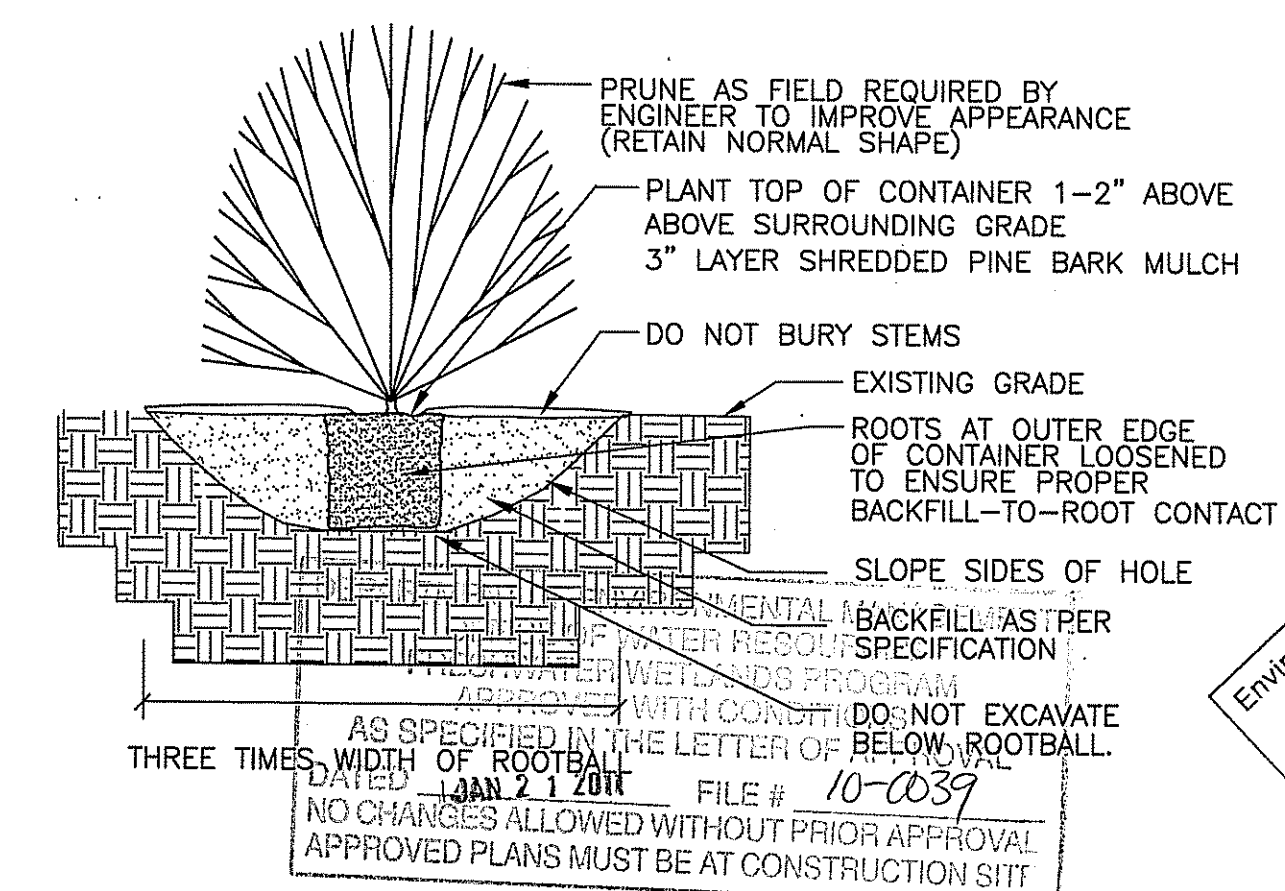
HAY BALE DETAIL
NTS



STANDARD PAVEMENT REPAIR DETAILS
NTS



EROSION CONTROL BLANKET
NTS



SHRUB PLANTING
NTS

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: C. KERSHAW
DRAWN BY: J. CABRERA
SHEET CHK'D BY: J. LYNCH
CROSS CHK'D BY: J. KEANEY
APPROVED BY: CHARLES ADELSBERGER
DATE: DECEMBER 2010

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consulting • engineering • construction • operations

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WOONSOCKET WATER DEPARTMENT
2010 WATER SYSTEM IMPROVEMENTS
CONTRACT 2

STANDARD CIVIL DETAILS I

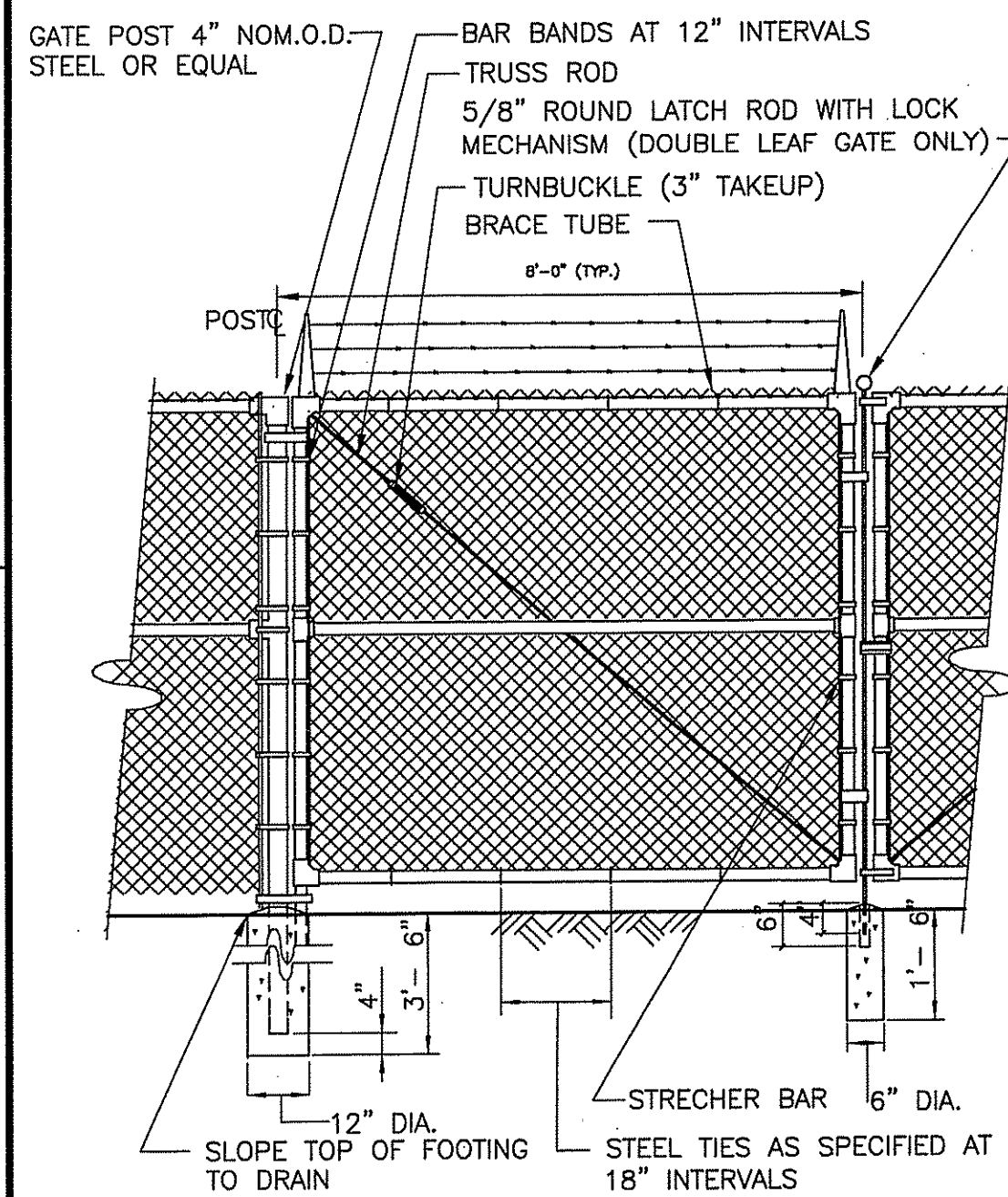
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PROJECT NO. 0669-72635/C2
FILE NAME: CSTDT001.DWG

SHEET NO.

8 OF 9

Accession No: 0669-P-2994

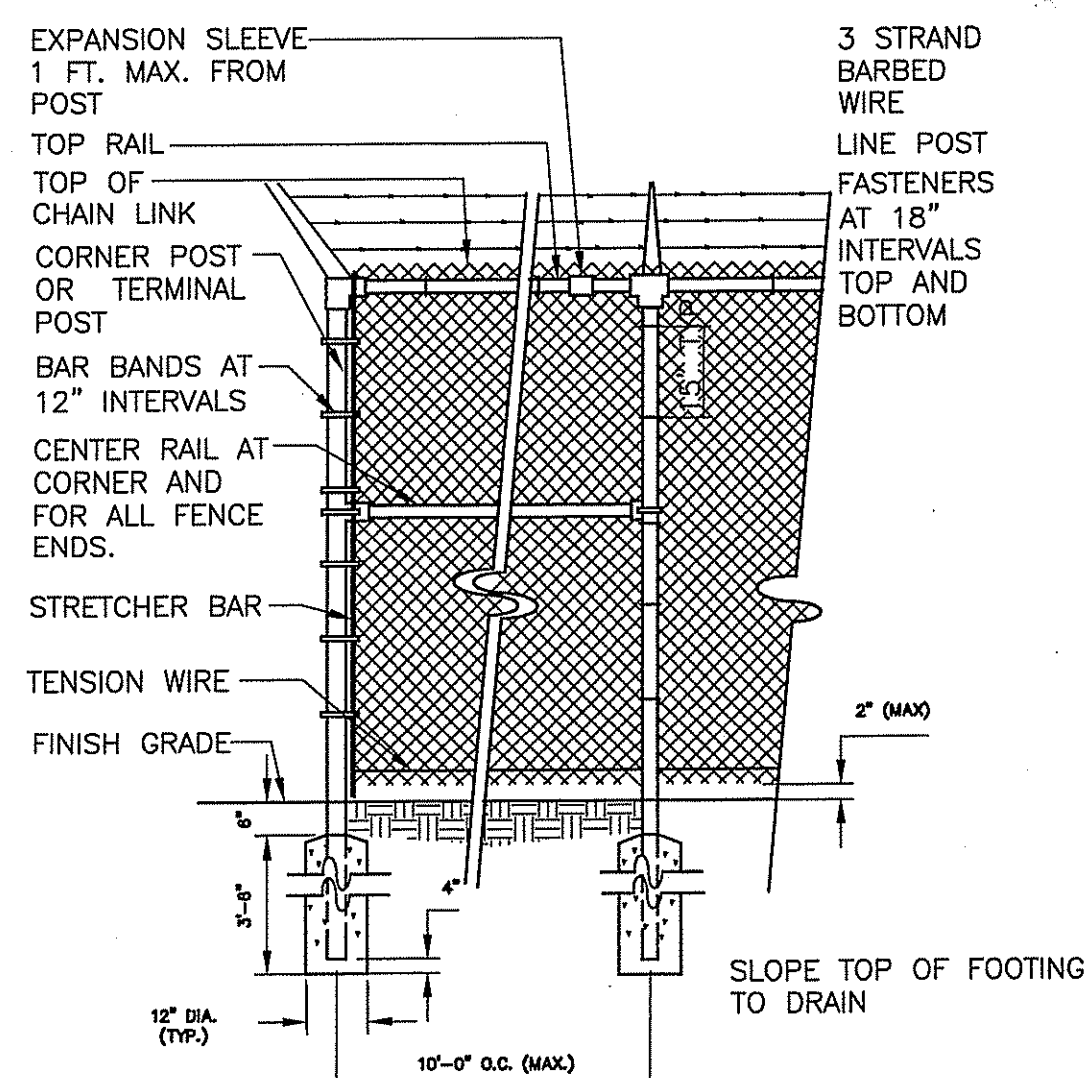


16' WIDE CHAIN LINK FENCE-DBL LEAF SWING GATE

DETAIL

NOT TO SCALE

- NOTES:
1. A DOUBLE SWING GATE WILL BE REQUIRED AT BOTH THE DIAMOND HILL AND INDUSTRIAL PARK PUMP STATIONS.
 2. HEIGHT OF SWING GATE SHALL BE AS SPECIFIED IN SECTION 02830.

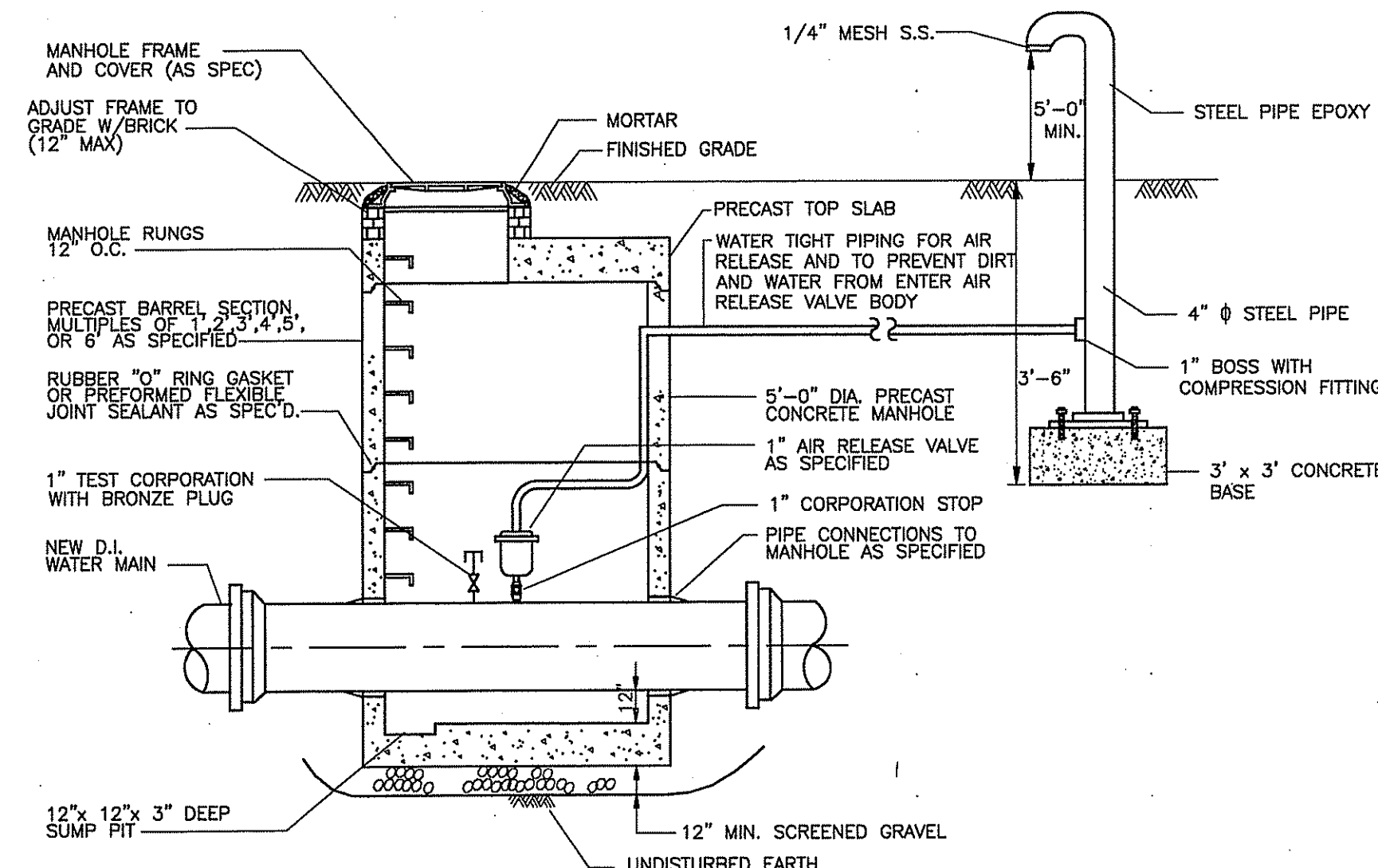


CHAIN LINK FENCE

DETAIL

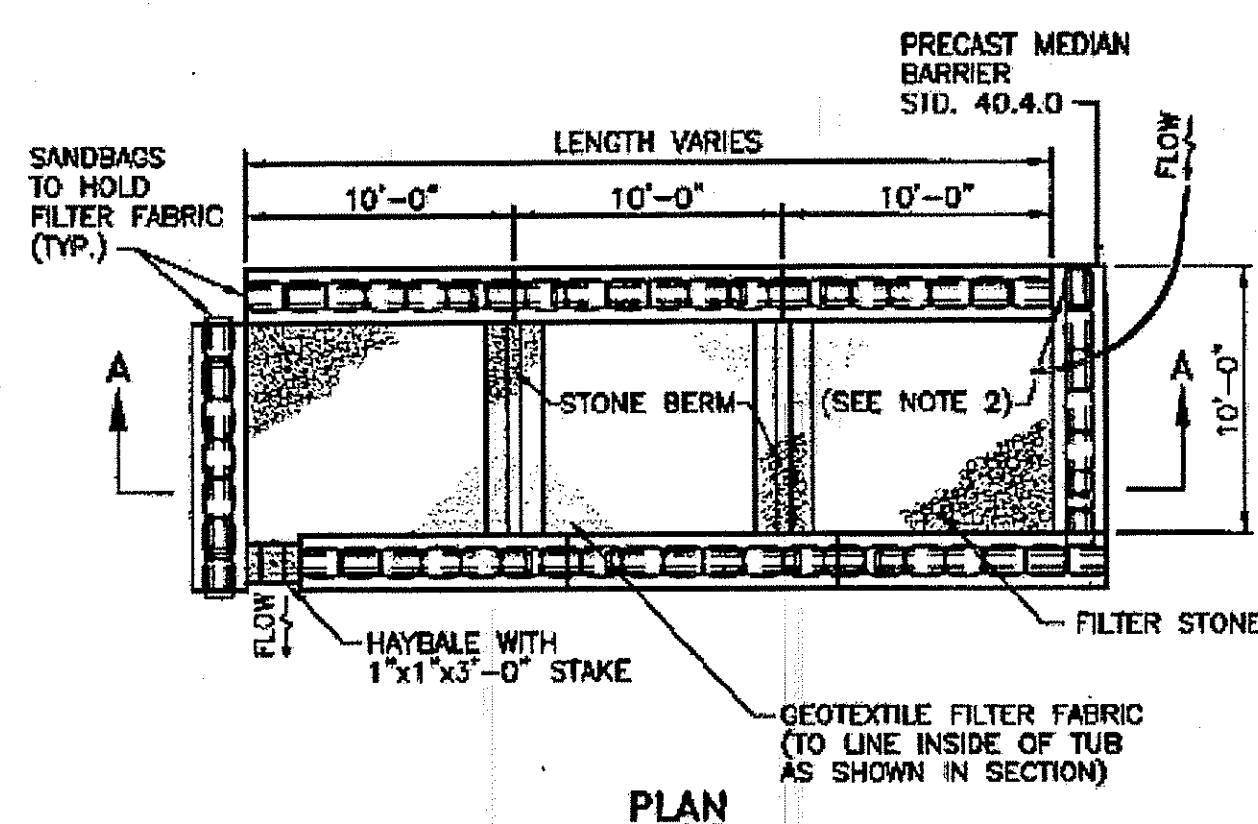
NOT TO SCALE

- NOTES:
1. FENCE HEIGHT SHALL BE AS SPECIFIED
 2. FABRIC SHALL BE ON OUTSIDE OF FENCE.
 3. FABRIC SHALL BE KNUCKLED ALONG TOP AND BOTTOM EDGES.
 4. FENCING SHALL BE INSTALLED AT BOTH THE DIAMOND HILL AND INDUSTRIAL PARK PUMP STATIONS AS SPECIFIED IN SECTION 02830.

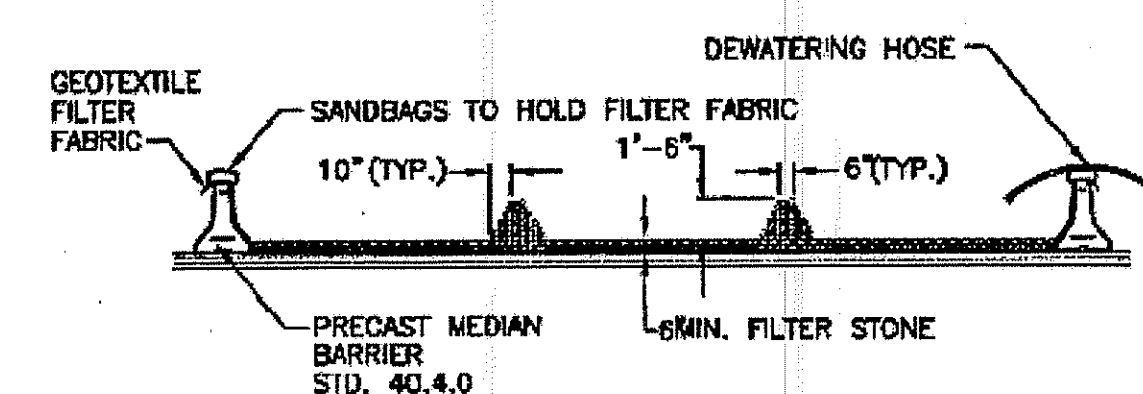


AIR RELEASE VALVE MANHOLE DETAIL

NOT TO SCALE



PLAN

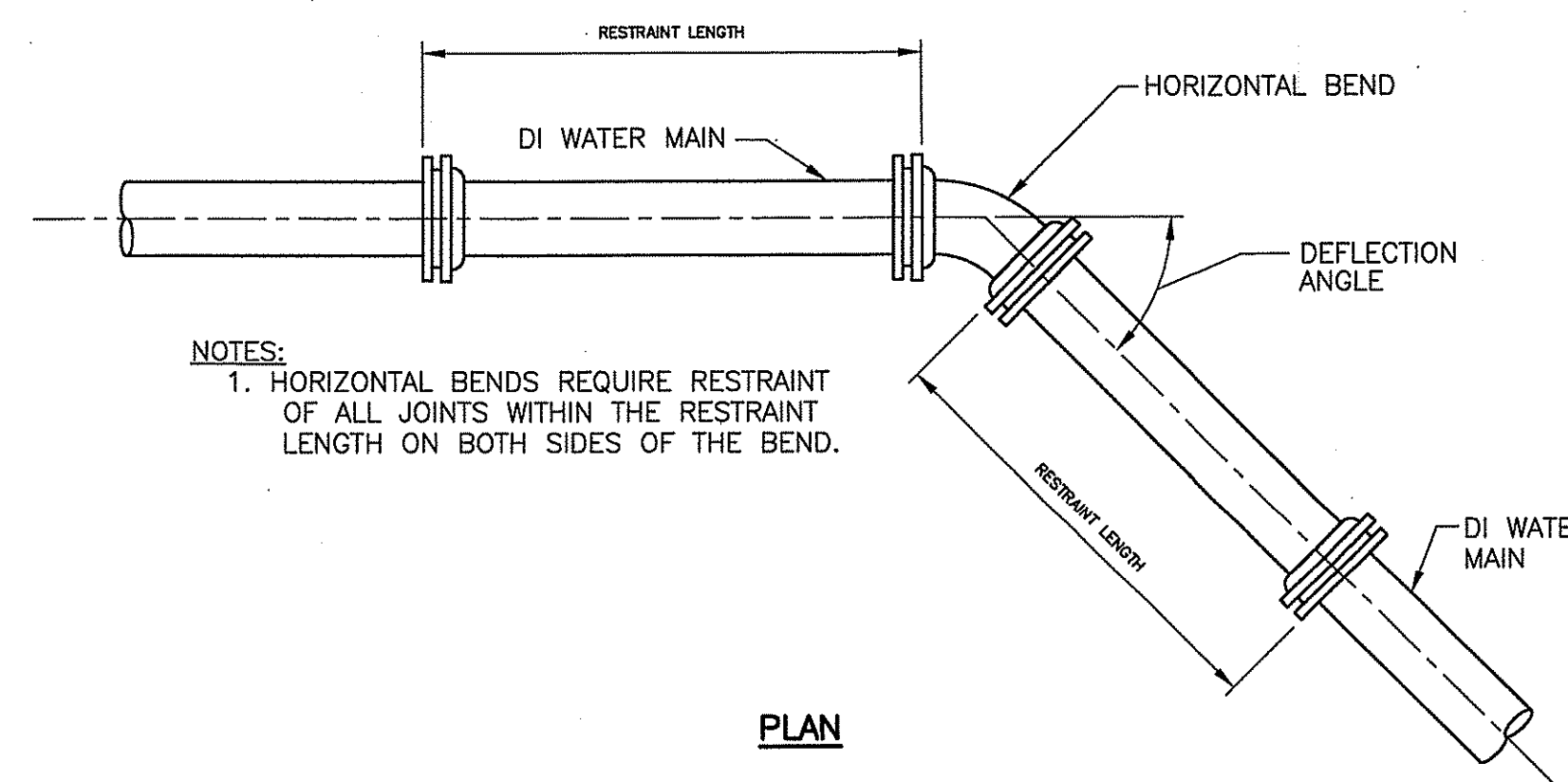


SECTION

DEWATERING BASIN

NTS

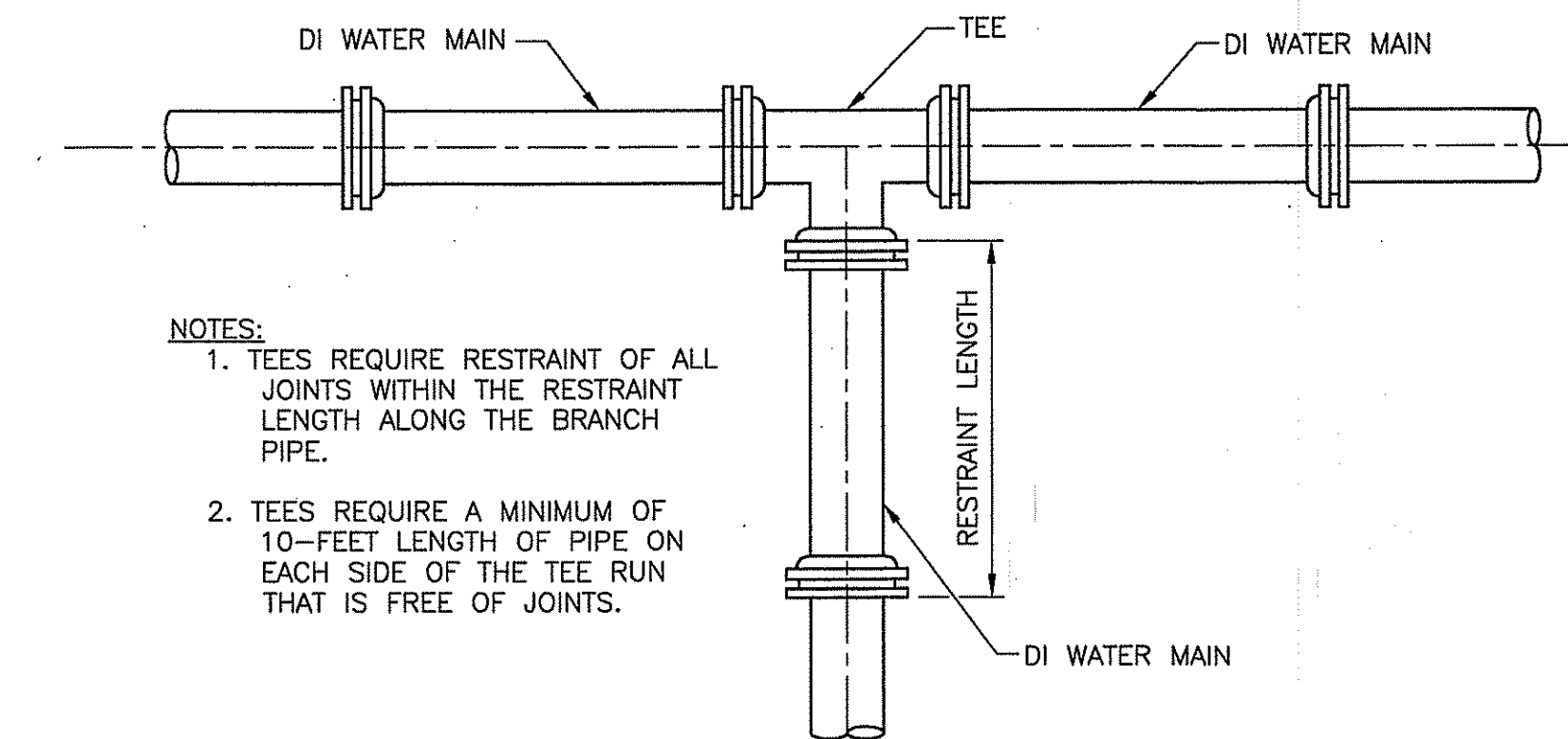
- NOTES:
1. DEWATERING BASIN SIZE SHALL BE IN DETERMINED BY THE FORMULA $16X \text{ GAL/MIN OF PUMP} = \text{CU. FT. OF STORAGE CAPACITY}$.
 2. PROVIDE ADDITIONAL SAND BAGS AS REQUIRED TO FILL SPACE BETWEEN ADJACENT BARRIERS.
 3. THIS WORK SHALL CONSIST OF THE CONSTRUCTION OF A DEWATERING BASIN FOR THE PURPOSE OF RECEIVING SEDIMENT-LADEN WATER PUMPED FROM THE EXCAVATION AND STREAM TO ALLOW FOR FILTRATION BEFORE IT REENTERS THE WATERWAY. PUMPING INTO THESE BASINS SHALL CEASE WHEN THE FLOW FROM THE BASIN BECOMES SEDIMENT LADEN.
 4. SURFACE WATER FLOW SHALL BE DIVERTED AROUND THIS DEVICE.
 5. THE OUTFALL FROM THE BASIN(S) SHALL HAVE A STABILIZED CONVEYANCE TO RECEIVING WATERS.
 6. ONCE THE DEWATERING BASIN BECOMES FILLED TO HALF OF THE EXCAVATED DEPTH, ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED DISPOSAL AREA OUTSIDE OF THE 100-YEAR FLOODPLAIN.
 7. SEDIMENT CONTROL DEVICES ARE TO REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED AND THE ENGINEER APPROVES THEIR REMOVAL. GROUND CONTOURS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION UNLESS SPECIFICALLY APPROVED OTHERWISE BY THE ENGINEER.
 8. LOCATION OF DEWATERING BASINS CAN NOT BE PLACED IN FRESHWATER WETLANDS AND MUST BE UTILIZED IN AN UPLAND AREA. LOCATION SHALL BE AS SHOWN ON THE PLANS OR AS OTHERWISE APPROVED BY THE ENGINEER.



DETAIL FOR HORIZONTAL BENDS

PLAN

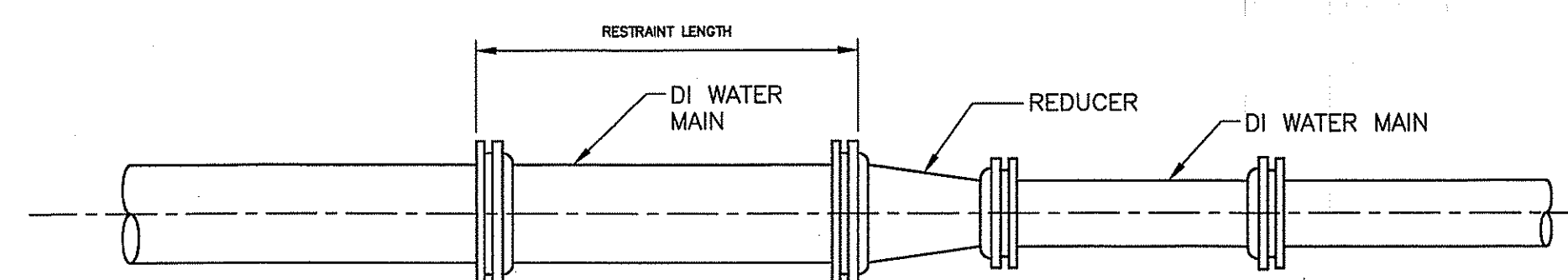
NTS



DETAIL FOR TEES

PLAN

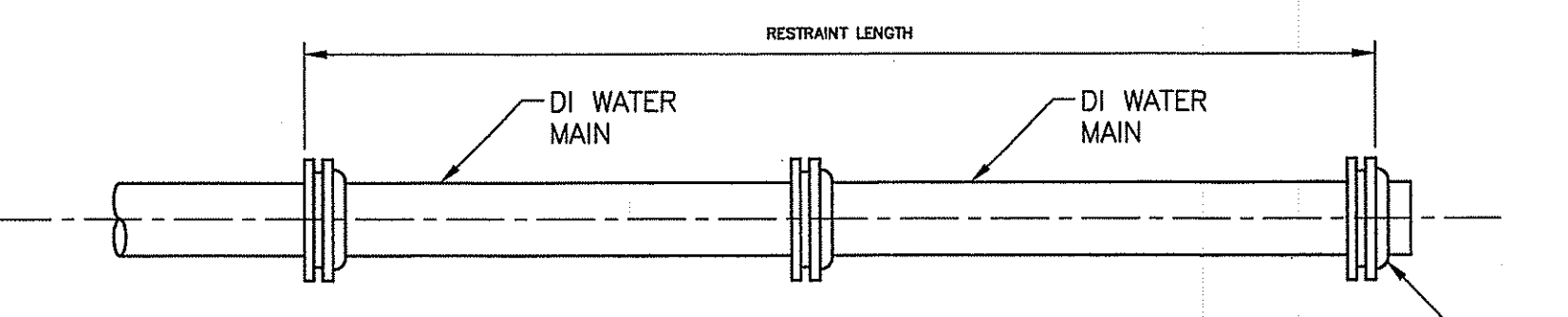
NTS



DETAIL FOR REDUCERS

PLAN

NTS



DETAIL FOR CAPS AND PLUGS

PLAN

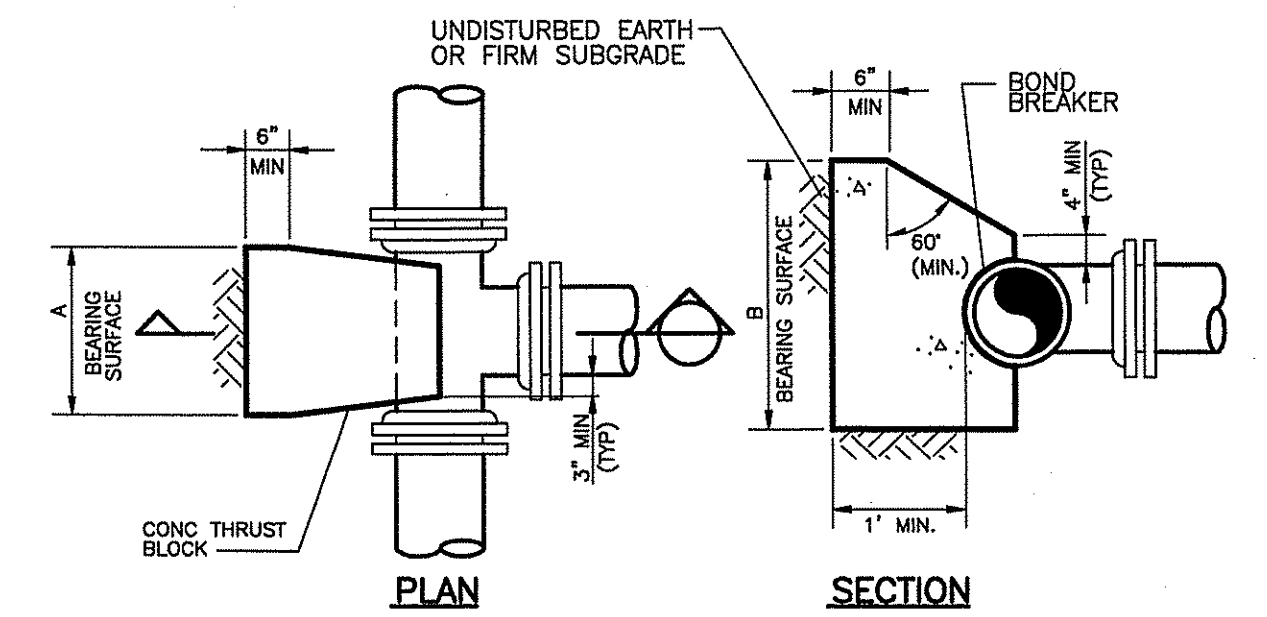
NTS

- NOTES:
1. CAPS AND PLUGS REQUIRE RESTRAINT OF ALL JOINTS WITHIN THE RESTRAINT LENGTH EXTENDING FROM THE CAP OR PLUG.

RESTRAINED PIPE LENGTH REQUIREMENTS	
DUCTILE IRON FITTING	LENGTH OF RESTRAINED PIPE (SEE NOTE 1)
12"-1/4 BEND	16
12"-1/8 BEND	7
12"-1/16 BEND	3
12"-1/32 BEND	2
16"x12" TEE	27
12"x12" TEE	29
12" VALVE	33

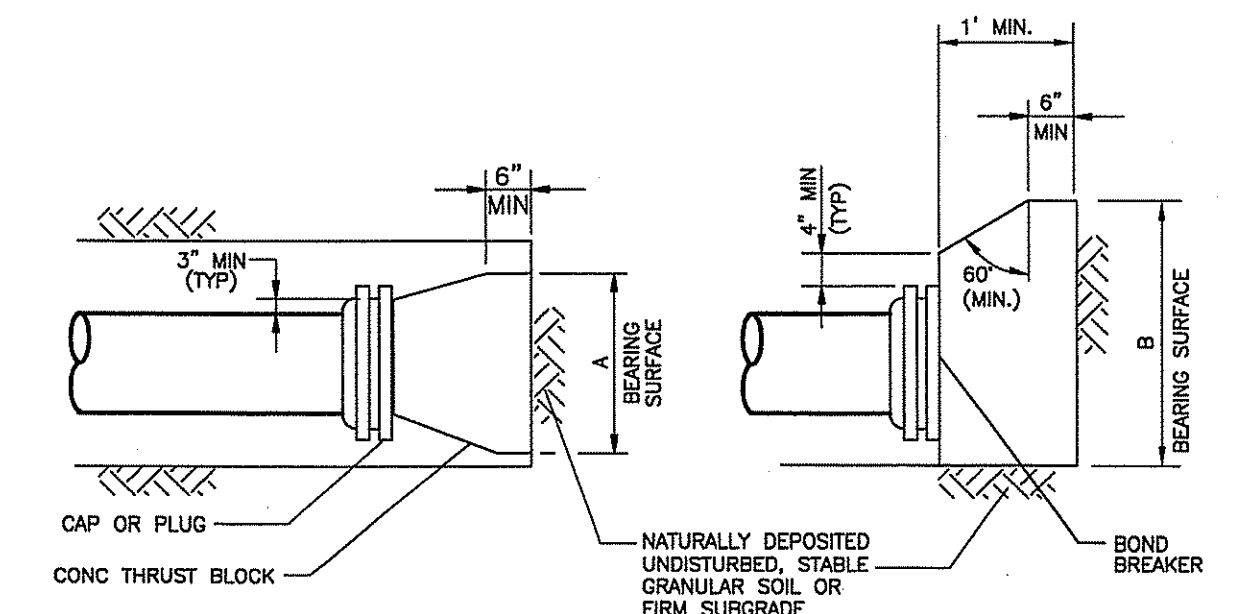
LIMITS OF RESTRAINED JOINTS

- NOTES:
1. MINIMUM LINEAR FEET OF WATER MAIN TO BE RESTRAINED ON EACH SIDE OF VALVES, BENDS AND REDUCERS, ON THE BRANCH SIDE OF TEES AND FROM PLUGS AND CAPS.
 2. ALL CONNECTIONS TO SIDE STREET MAINS AND NEW HYDRANTS SHALL BE RESTRAINED FOR THE ENTIRE LENGTH. THIS LENGTH SUPERSEDES THE LENGTH GIVEN ABOVE FOR THE BRANCH SIDE OF TEES.



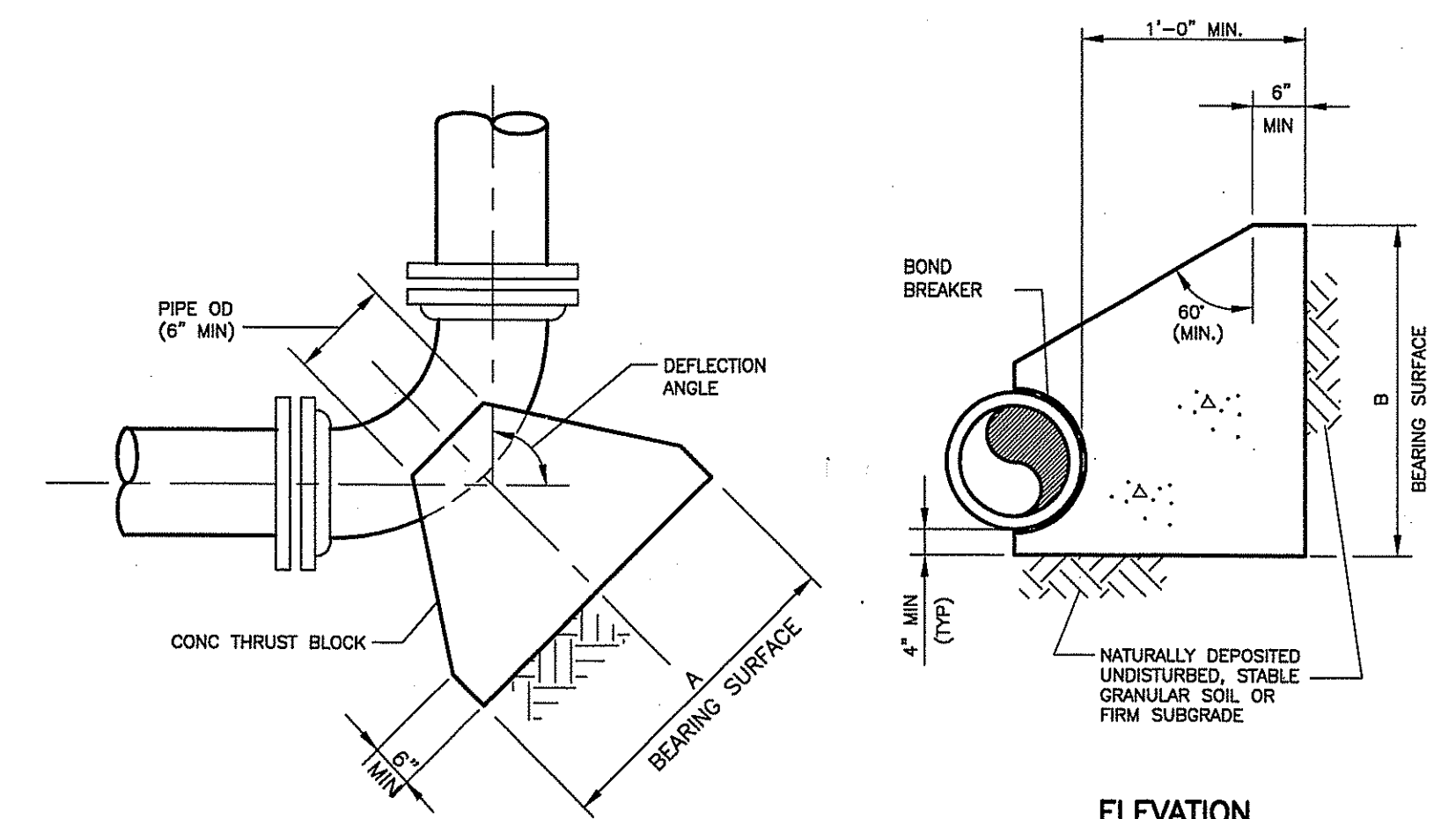
DETAIL FOR TEES

NOT TO SCALE



DETAIL FOR CAPS AND PLUGS

NOT TO SCALE



DETAIL FOR HORIZONTAL BENDS

NOT TO SCALE

- NOTES:
1. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH
 2. THRUST BLOCKS TO BE USED AT ALL 12" FITTINGS, AND AS DIRECTED BY ENGINEER.

CONCRETE THRUST BLOCK REQUIREMENTS	
DUCTILE IRON FITTING	MIN. BEARING AREA (A x B)
12"-1/4 BEND	9 SQ. FT.
12"-1/8 BEND	5 SQ. FT.
12"-1/16 BEND	3 SQ. FT.
12"-1/32 BEND	2 SQ. FT.
16"x12" TEE	7 SQ. FT.
12"x12" TEE	7 SQ. FT.
12" VALVE	7 SQ. FT.

THRUST BLOCK DETAIL

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED JAN 21 2011 FILE # 10-0039
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Environmental Management
DEC 20 2011
Office of

CHARLES ADELSBERGER
REGISTERED PROFESSIONAL ENGINEER

REV.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: C. KERSHAW
DRAWN BY: J. CABRERA
SHEET CHK'D BY: J. LYNCH
CROSS CHK'D BY: J. KEANEY
APPROVED BY: C. ADELSBERGER
DATE: DECEMBER 2010

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consulting • engineering • construction • operations

CITY OF WOONSOCKET, RHODE ISLAND
WOONSOCKET WATER DEPARTMENT
2010 WATER SYSTEM IMPROVEMENTS
CONTRACT 2

STANDARD CIVIL DETAILS II

PROJECT NO. 0669-72635/C2
FILE NAME: CST07002.DWG
SHEET NO.
9 OF 9
Accession No: 0669-P-2995